

Oznaka poročila: ARRS-RPROG-ZP-2015/119



ZAKLJUČNO POROČILO O REZULTATIH RAZISKOVALNEGA PROGRAMA

(za obdobje 1. 1. 2009 - 31. 12. 2014)

A. PODATKI O RAZISKOVALNEM PROGRAMU

1. Osnovni podatki o raziskovalnem programu

Šifra programa	P3-0327
Naslov programa	Reprodukcija človeka - laboratorijski in eksperimentalni vidiki Human Reproduction Experimental And Laboratory Aspects
Vodja programa	11040 Borut Kovačič
Obseg raziskovalnih ur (vključno s povečanjem financiranja v letu 2014)	12240
Cenovni razred	B
Trajanje programa	01.2009 - 12.2014
Izvajalci raziskovalnega programa (javne raziskovalne organizacije - JRO in/ali RO s koncesijo)	334 Univerzitetni klinični center Maribor
Raziskovalno področje po šifrantu ARRS	3 MEDICINA 3.05 Reprodukcijska človeka
Družbeno-ekonomski cilj	07. Zdravje
Raziskovalno področje po šifrantu FOS	3 Medicinske vede 3.01 Temeljna medicina

B. REZULTATI IN DOSEŽKI RAZISKOVALNEGA PROGRAMA

2. Povzetek raziskovalnega programa¹

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V raziskovalnem programu je raziskovalna skupina izbrala ključne raziskovalne probleme s področij humane reprodukcije, splošne ginekologije, pediatrije in nevrokirurgije.

REPRODUKCIJA ČLOVEKA: Odkrili smo nekatere dejavnike, ki vplivajo na in vitro maturacijo jajčnih celic. Dokazali smo, da so testi funkcionalnosti semenčic lahko uporabno orodje v diagnostiki in preprečevanju popolne neoplojenosti oocitov po IVF postopku. Ugotovili smo vpliv endokrinih motilcev iz okolja na oploditveno sposobnost moških. S fotografiranjem v časovnih presledkih (time-lapse) smo prepoznali nekatere karakteristike, ki že ob prvi delitvi zigote determinirajo razvoj zarodka. Kot prvi smo opisali morfološko heterogenost človeških morul in te karakteristike povezali z napovedjo blastulacije in implantacije. Dokazali smo, da se zarodki razvijajo bolje v hipoksičnih in vitro pogojih. Raziskava je bila vključena v Cochrane Review in potrjena kot najbolj merodajna klinična raziskava med vsemi zajetimi študijami.

SPLOSNA GINEKOLOGIJA: V raziskavi prevalence miomov smo ugotovili povezavo multiplih leiomiomov in genskega polimorfizma CYP17A1. Ugotavljali smo učinkovitost solifenacina pri pacientkah z urgenco in urgentno inkontinenco. Raziskovali smo možnosti novih tehnik ocenjevanja hipermobilnosti sečnice pri ženskah z urinsko inkontinenco.

PEDIATRIJA: V raziskavi genetske in klinične značilnosti otrok z vezikoureternim refluksom (VUR) in hipodisplazijo ledvic oziroma refluksno nefropatijo smo raziskali spremembe strukturne genomske variabilnosti v kandidatnih genih za VUR.

NEVROKIRURGIJA: Uporaba imunohistokemijskega barvanja tumorskih markerjev v klinični praksi pri bolnikih z malignimi možganskimi tumorji. Uvaja se mikrobiološka in PCR analiza vzorcev možganskih tumorjev na viruse in bakterije za nadaljnje raziskovanje morebitne vloge infekcije pri tumorogenezi. Prognostični pomen vnetnih kazalcev za prognozo bolnikov z gliomi.

Rezultati pomenijo nova bazična spoznanja na področju fiziologije človeških spolnih celic in zarodkov ter na področju reproduktivne medicine, ginekologije, pediatrije in nevrokirurgije. Prav zato raziskovalno delo nadaljujemo v okviru novega programa na istem področju.

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In this research program, the research group selected key research problems in the areas of human reproduction, gynecology, pediatrics, and neurosurgery.

HUMAN REPRODUCTION: Some of the factors that affect the in vitro maturation of oocytes were found. It was proved, that sperm functional tests can be useful diagnosis tool for prevention total fertilization failure after IVF. The exposure to endocrine disruptors in the environment was found to affect fertilizing ability of men. With the time-lapse photography we identified certain characteristics that determine embryo development already at the stage of first cleavage of the zygote. We examined as first the morphological heterogeneity of human morulas and identified those characteristics that are associated with blastulation and implantation ability. We proved that human embryos develop better in hypoxic in vitro conditions. The survey was included in the Cochrane Review and confirmed as the most representative clinical trial among all included studies.

GENERAL GYNECOLOGY: In the study of prevalence of miomas the relationship between multiple leiomiomas and CYP17A1 gene polymorphism was found. We assessed the efficacy of solifenacin in female patients with emergency and urge incontinence. The potential of new techniques for assessing urethral hypermobility in women with urinary incontinence was studied.

PEDIATRICS: In the study of genetic and clinical characteristics of

children with vesicoureteric reflux (VUR) and kidney hypodysplasia or reflux nephropathy, we investigated changes in structural genomic variability in candidate genes for VUR.

NEUROSURGERY: An immunohistochemical staining of tumor markers was introduced into clinical practice in patients with malignant brain tumors. To investigate the possible role of the infection in tumorigenesis we analyze brain tumor samples with PCR for viruses and bacteria. Prognostic value of inflammation markers in blood in patients with malignant glioma.

The results represent a new basic knowledge about the physiology of human gametes and embryos and contribute many new research aspects in the field of reproductive medicine, gynecology, pediatrics, and neurosurgery. Most of the results represent new starting points for further research.

3. Poročilo o realizaciji predloženega programa dela na raziskovalnem programu, (vključno s predloženim dopolnjenim programom dela v primeru povečanja financiranja raziskovalnega programa v letu 2014)²

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Področje: Reprodukcijski človeka

1. Razvili smo metodo invitro maturacije nezrelih jajčnih celic za postopke oploditve z biomedicinsko pomočjo (objava: COBISS.SI-ID [3035711](#)).
2. Kultivacija blastocist v atmosferi z zmanjšano vsebnostjo kisika. Ugotovili smo, da je razvoj blastocist ob nižji koncentraciji kisika boljši (objava COBISS.SI-ID [3653439](#))
3. Določali razvojno sposobnost 5 dni starih morul z zakasnelim razvojem ter različnimi deleži izključenih celic in fragmentov (objava: COBISS.SI-ID [4067391](#))
4. Vpliv zakasnele kompaktacije in izgubljene citoplazme na razvojni potencial morul in morfološke značilnosti iz njih razvitih blastocist. Pri klinično neuporabnih blastocitah smo preverili numerične kromosomske nepravilnosti za kromosome 13, 16, 18, 21 in 22 (objava: COBISS.SI-ID [3947327](#))
5. Uvedli tehnologijo fotografiranja v časovnih presledkih (Timelaps), ki omogoča časovno ovrednotenje posameznih dogodkov v zgodnjem embrionalnem razvoju (2012). Analizirali smo zarodke pri pacientkah s slabo odzivnostjo jajčnika in tistih pridobljenih iz naravnih ciklusov (objava: COBISS.SI-ID [4728895](#))
6. Testirali smo funkcionalno zrelost semenčic s katerimi smo določali delež semenčic s fragmentirano DNK, delež semenčic s sposobnostjo vezave na hialuronan in delež hiperaktiviranih semenčic. Namen študije je bil zanesljivejša ocena oploditvene sposobnosti semenčic za metodo IVF (objava: COBISS.SI-ID [4623679](#)).

7. Ocenjevali smo vpliv izpostavljenosti delovanju endokrinih motilcev v okolju na oploditveno sposobnost moških (objava: COBISS.SI-ID [4809023](#))

Področje: Splošna ginekologija

1. Raziskovali smo prevalenco miomov na naključnem vzorcu 2000 žensk, ki ga je izdelal statistični urad RS. Ugotavljali smo povezavo multiplih leiomiomov in genskega polimorfizma CYP17A1 (objava: COBISS-ID 4033599).

2. Ugotavljali smo učinkovitost solifenacina pri pacientkah z urgenco in urgentno inkontinenco (objava: COBISS-ID 4314175).

3. Raziskovali smo možnosti novih tehnik ocenjevanja hipermobilnosti sečnice pri ženskah z urinsko inkontinenco. Uvedli smo metodo, ki lahko postane del POP-Q klasifikacijskega sistema (objava: COBISS-ID [4941375](#)).

Področje: Pediatrija

1. V raziskavi genetske in klinične značilnosti otrok z vezikoureternim refluksom (VUR) in hipodisplazijo ledvic oziroma refluksno nefropatijo smo raziskovali spremembe strukturne genomske variabilnosti v kandidatnih genih za VUR (objava: COBISS-ID 3238207)

2. Poskušali smo dokazati povezanost genetskih preiskav s kliničnimi in laboratorijskimi parametri (objava: COBISS-ID 27862745)

Področje: Nevrokirurgija

1. Razvili smo imunokemijsko barvanje različnih tumorskih markerjev na živalskih modelih in novo metodo prenesli v redno klinično prakso (objava: COBISS-ID 3389503).

2. V sodelovanju s strokovnjaki iz tujine smo živalske modele uporabljali za preučevanje morebitne vloge določenih snovi v zdravljenju malignih humanih gliomov (objava: COBISS-ID 382143)

3. Na živalskih modelih možganov podgan in piščančjih zarodkov smo proučevali prognostične vrednosti nekaterih tumorskih markerjev (objava: COBISS-ID 4138815, COBISS-ID 4099647)

4. Raziskovalne tehnike napovednih tumorskih označevalcev smo prenesli v klinično delo (imunohistokemijsko barvanje). Raziskovali smo možno vzročno povezavo med kronično okužbo možganovine in gliomatozo (objava: COBISS-ID 4294975, COBISS-ID 4880703).

V 6-letnem obdobju 2009-2014 so raziskovalci programske skupine (6 raziskovalcev na leto) objavili v domači in tuji publicistiki (po podatkih iz SICRISA z dne 2.3.2015):

- 1.01 Izvirni znanstveni članek: 44 člankov.
- 1.02. Pregledni znanstveni članek: 11 člankov.
- 1.03. Kratki znanstveni prispevek: 3 članki.

Izjemni dosežki (A''): 2 članka,
Zelo kvalitetni dosežki (A'): 26 člankov,
Pomembni dosežki (A^{1/2}): 29 člankov.

Skupno število faktorjev vpliva člankov v obdobju 2009 - 2014 (do 16.4.2014): 66,1 (povprečna vrednost na članek: 1,41).

CI10 - število čistih citatov znanstvenih del v zadnjih 10 letih (2005-2014): 1112.

4. Ocena stopnje realizacije programa dela na raziskovalnem programu in zastavljenih raziskovalnih ciljev³

SLO

Raziskovalni program je na vseh segmentih realiziran po zastavljenih ciljih. Raziskovalni cilji so doseženi in preko bogate publicistične dejavnosti dostopni oceni in uporabi širši domači in tuji javnosti. Delo ocenjujemo kot odmevno v mednarodnem prostoru o čemer govorijo citati raziskovalnega dela, število v celoti natisnjenih del s spleta (download), ki za nekatere prispevke presega število 15.000. Zaradi raziskovalnega dela imajo člani programske skupine aktivno vlogo v mednarodnih združenjih in uredništvih mednarodnih revij.

5. Utemeljitev morebitnih sprememb programa raziskovalnega programa oziroma sprememb, povečanja ali zmanjšanja sestave programske skupine v letu 2014⁴

SLO

Sprememb vsebine programa ni bilo. Spremembe v sestavi programske skupine pa smo sproti sporočali na ARRS, vključno s spremembo vodje programa tik pred koncem leta 2014.

6. Najpomembnejši znanstveni rezultati programske skupine⁵

Znanstveni dosežek			
1.	COBISS ID	3035711	Vir: COBISS.SI
	Naslov	<i>SLO</i>	Impact of insulin resistance on the developmental potential of immature oocytes retrieved from human chorionic gonadotropin-primed women with polycystic ovary syndrome undergoing in vitro maturation
		<i>ANG</i>	Impact of insulin resistance on the developmental potential of immature oocytes retrieved from human chorionic gonadotropin-primed women with polycystic ovary syndrome undergoing in vitro maturation
			In a homeostasis model assessment-insulin resistance (HOMA-IR)-positive group of women with polycystic ovary syndrome undergoing in vitro maturation (IVM), the maturation rate of immature oocytes was

	Opis	SLO	significantly lower compared with a HOMA-IR negative group of women (47% vs. 59%). The results of our study showed that IR and hyperinsulinemia have an adverse effect on the developmental potential of immature oocytes retrieved in the IVM procedure.		
		ANG	In a homeostasis model assessment-insulin resistance (HOMA-IR)-positive group of women with polycystic ovary syndrome undergoing in vitro maturation (IVM), the maturation rate of immature oocytes was significantly lower compared with a HOMA-IR negative group of women (47% vs. 59%). The results of our study showed that IR and hyperinsulinemia have an adverse effect on the developmental potential of immature oocytes retrieved in the IVM procedure.		
	Objavljeno v		American Fertility Society; Fertility and sterility; 2009; Vol. 91, no. 3; str. 957-959; Impact Factor: 3.970;Srednja vrednost revije / Medium Category Impact Factor: 1.77; A'': 1;A': 1; WoS: SD, WF; Avtorji / Authors: Vlaisavljević Veljko, Kovač Vilma, Čížek-Sajko Mojca		
	Tipologija		1.03 Kratki znanstveni prispevek		
2.	COBISS ID		4936511	Vir: COBISS.SI	
	Naslov	SLO	Should an intrauterine insemination with donor semen be performed 1 or 2 days after the spontaneous LH rise?		
		ANG	Should an intrauterine insemination with donor semen be performed 1 or 2 days after the spontaneous LH rise?		
	Opis	SLO	Summary question: What is the impact on pregnancy rates when intrauterine insemination (IUI) is performed 1 or 2 days after the spontaneous LH rise? Summary answer: IUI 1 day after the spontaneous LH rise results in significantly higher clinical pregnancy rates compared with IUI performed 2 days after the LH rise. What is known already: IUI is scheduled within a limited time interval during which successful conception can be expected. Data about the optimal timing of IUI are based on inseminations following ovarian stimulation. There is no available evidence regarding the correct timing of IUI in a natural menstrual cycle following the occurrence of a spontaneous LH rise. Study design, size, duration: A prospective RCT, including patients undergoing IUI with donor sperm in a natural menstrual cycle. IUI cycles (n = 435) were randomized between October 2010 and April 2013, of which 23 were excluded owing to protocol deviation and 412 received the allocated intervention. Participants/materials, setting, methods: Serial serum LH concentrations were analysed in samples taken between 07:00 and 09:00 h to detect an LH rise from Day 11 of the cycle onwards. The subjects were randomized to receive insemination either 1 or 2 days after the observed LH rise. In the final analysis, there were 213 cycles in the group receiving IUI 1 day after the LH rise and 199 cycles in the group receiving IUI 2 days after the LH rise. Main results and the role of chance: Significantly higher clinical pregnancy rates per IUI cycle were observed in patients undergoing IUI 1 day after the LH rise when compared with patients undergoing IUI 2 days after the LH rise [19.7 (42/213) versus 11.1% (22/199), P = 0.02]. In view of the timing of sampling for LH, the inseminations were performed at 27 h (+/- 2 h) and 51 h (+/- 2 h) after detection of the LH rise. The risk ratio of achieving a clinical pregnancy if IUI was scheduled 1 day after the LH rise compared with 2 days was 1.78 [95% confidence interval (CI), 1.11-2.88]. This points towards a gain of one additional clinical pregnancy for every 12 cycles performed 1 day instead of 2 days after the LH rise. When analysing the results per patient, including only women who underwent their first treatment cycle of insemination, the outcome was in line with the per cycle analysis, demonstrating an 8% difference in pregnancy rate in favour of the early group (20.5 versus 12.2%), however, this difference was not significant. Limitations, reasons for caution: Optimal monitoring for the		

		occurrence of the LH rise involves several daily LH measurements, which is not always amenable to everyday clinical practice, however, daily sampling was sufficient to detect a significant difference in pregnancy rate. The strict inclusion of a highly selected population of patients who underwent IUI in a natural cycle may have been a limitation. IUI in a natural menstrual cycle confers lower success rates compared with IUI following ovarian stimulation and is not suitable for patients with ovulatory dysfunction. Furthermore, a similar study in a larger number of women is required to confirm the result in terms of pregnancy rate per patient. Wider implications of the findings: This is the first RCT to show that timing of IUI in a natural menstrual cycle is important and that IUI should be performed 1 day after the LH rise, rather than 2 days post-LH rise. Daily monitoring of the rise in LH, as performed in our study, can be adopted to achieve a higher pregnancy rate per IUI cycle. Study funding/competing interest(s): No funding was received for this study. All authors declare to have no conflict of interest with regard to this trial. Trial registration number: The trial was registered at clinicaltrials.gov (NCT01622023).
	ANG	Summary question: What is the impact on pregnancy rates when intrauterine insemination (IUI) is performed 1 or 2 days after the spontaneous LH rise? Summary answer: IUI 1 day after the spontaneous LH rise results in significantly higher clinical pregnancy rates compared with IUI performed 2 days after the LH rise. What is known already: IUI is scheduled within a limited time interval during which successful conception can be expected. Data about the optimal timing of IUI are based on inseminations following ovarian stimulation. There is no available evidence regarding the correct timing of IUI in a natural menstrual cycle following the occurrence of a spontaneous LH rise. Study design, size, duration: A prospective RCT, including patients undergoing IUI with donor sperm in a natural menstrual cycle. IUI cycles (n = 435) were randomized between October 2010 and April 2013, of which 23 were excluded owing to protocol deviation and 412 received the allocated intervention. Participants/materials, setting, methods: Serial serum LH concentrations were analysed in samples taken between 07:00 and 09:00 h to detect an LH rise from Day 11 of the cycle onwards. The subjects were randomized to receive insemination either 1 or 2 days after the observed LH rise. In the final analysis, there were 213 cycles in the group receiving IUI 1 day after the LH rise and 199 cycles in the group receiving IUI 2 days after the LH rise. Main results and the role of chance: Significantly higher clinical pregnancy rates per IUI cycle were observed in patients undergoing IUI 1 day after the LH rise when compared with patients undergoing IUI 2 days after the LH rise [19.7 (42/213) versus 11.1% (22/199), P = 0.02]. In view of the timing of sampling for LH, the inseminations were performed at 27 h (+/- 2 h) and 51 h (+/- 2 h) after detection of the LH rise. The risk ratio of achieving a clinical pregnancy if IUI was scheduled 1 day after the LH rise compared with 2 days was 1.78 [95% confidence interval (CI), 1.11-2.88]. This points towards a gain of one additional clinical pregnancy for every 12 cycles performed 1 day instead of 2 days after the LH rise. When analysing the results per patient, including only women who underwent their first treatment cycle of insemination, the outcome was in line with the per cycle analysis, demonstrating an 8% difference in pregnancy rate in favour of the early group (20.5 versus 12.2%), however, this difference was not significant. Limitations, reasons for caution: Optimal monitoring for the occurrence of the LH rise involves several daily LH measurements, which is not always amenable to everyday clinical practice, however, daily sampling was sufficient to detect a significant difference in pregnancy rate. The strict inclusion of a highly selected population of patients who underwent IUI in a natural cycle may have been a limitation. IUI in a natural menstrual cycle confers lower success rates compared with IUI following ovarian stimulation and is not suitable for patients with ovulatory dysfunction. Furthermore, a

		similar study in a larger number of women is required to confirm the result in terms of pregnancy rate per patient. Wider implications of the findings: This is the first RCT to show that timing of IUI in a natural menstrual cycle is important and that IUI should be performed 1 day after the LH rise, rather than 2 days post-LH rise. Daily monitoring of the rise in LH, as performed in our study, can be adopted to achieve a higher pregnancy rate per IUI cycle. Study funding/competing interest(s): No funding was received for this study. All authors declare to have no conflict of interest with regard to this trial. Trial registration number: The trial was registered at clinicaltrials.gov (NCT01622023).
	Objavljeno v	IRL Press; Human reproduction; 2014; Vol. 29, no. 4; str. [697]-703; Impact Factor: 4.585; Srednja vrednost revije / Medium Category Impact Factor: 1.993; A'': 1; A': 1; WoS: SD, WF; Avtorji / Authors: Blockeel C., Knez Jure, Polyzos N. P., De Vos M., Camus M., Tournaye H.
	Tipologija	1.01 Izvirni znanstveni članek
3.	COBISS ID	42292578 Vir: COBISS.SI
	Naslov	<i>SLO</i> Self-reported adherence behavior in adolescent hypertensive patients
		<i>ANG</i> Self-reported adherence behavior in adolescent hypertensive patients
	Opis	<i>SLO</i> Objective: This exploratory study examined the role that illness representations and personality play in the various adherence behaviors of adolescents diagnosed with essential hypertension. Methods: The participants were 97 hypertensive adolescents. They completed self-report questionnaires pertaining to (1) demographic and medical data, (2) adherence, (3) illness representations, and (4) personality. Medical charts were also assessed. Results: The hierarchical regression analyses indicated that: (1) conscientiousness, agreeableness, and perception of treatment effectiveness account for a significant amount of variance in general adherence; (2) perception of treatment effectiveness is predictive of overall specific adherence; and (3) for adherence to most of the individual specific regimen recommendations, illness representations are more predictive compared to personality dimensions. Conclusions: The personality domains of conscientiousness, extraversion, agreeableness, and illness representation dimensions (treatment control, concern, and emotional burden) were shown to predict adherence behaviors in adolescent hypertensive patients differentially. Study implications and limitations are discussed.
		<i>ANG</i> Objective: This exploratory study examined the role that illness representations and personality play in the various adherence behaviors of adolescents diagnosed with essential hypertension. Methods: The participants were 97 hypertensive adolescents. They completed self-report questionnaires pertaining to (1) demographic and medical data, (2) adherence, (3) illness representations, and (4) personality. Medical charts were also assessed. Results: The hierarchical regression analyses indicated that: (1) conscientiousness, agreeableness, and perception of treatment effectiveness account for a significant amount of variance in general adherence; (2) perception of treatment effectiveness is predictive of overall specific adherence; and (3) for adherence to most of the individual specific regimen recommendations, illness representations are more predictive compared to personality dimensions. Conclusions: The personality domains of conscientiousness, extraversion, agreeableness, and illness representation dimensions (treatment control, concern, and emotional burden) were shown to predict adherence behaviors in adolescent hypertensive patients differentially. Study implications and limitations are discussed.
		Society of Pediatric Psychology; Journal of pediatric psychology; 2010; Vol. 35, no. 9; str. 1049-1060; Impact Factor: 2.943; Srednja vrednost revije /

4.	Objavljeno v		Medium Category Impact Factor: 2.002; A': 1; WoS: MY; Avtorji / Authors: Žugelj Urška, Zupančič Maja, Komidar Luka, Kenda Rajko, Marčun-Varda Nataša, Gregorič Alojz
	Tipologija		1.01 Izvirni znanstveni članek
	COBISS ID		4623679 Vir: COBISS.SI
	Naslov	SLO	Are sperm DNA fragmentation, hyperactivation, and hyaluronan-binding ability predictive for fertilization and embryo development in in vitro fertilization and intracytoplasmic sperm injection?
		ANG	Are sperm DNA fragmentation, hyperactivation, and hyaluronan-binding ability predictive for fertilization and embryo development in in vitro fertilization and intracytoplasmic sperm injection?
	Opis	SLO	Objective. To determine the diagnostic value of the following sperm function tests in predicting the fertilizing ability of spermatozoa in conventional in vitro fertilization (IVF) and intracytoplasmic sperm injection (ICSI): hyaluronan-binding assay (HBA), DNA fragmentation (Halosperm), and hyperactivity. Design. Prospective study. Setting. University medical center. Patient(s). 133 couples undergoing infertility treatment with IVF/ICSI. Intervention(s). Analysis of sperm DNA fragmentation, hyaluronan-binding ability, and hyperactivation on washed semen samples used for the insemination of oocytes. Main Outcome Measure(s). Correlation between the results of sperm function tests and the fertilization rate (FR) or embryo quality (EQ) after IVF and ICSI. Comparison of the sperm DNA fragmentation, hyperactivation, and hyaluronan binding ability between cycles with less than 50% (group 1) and more than 50% (group 2) of oocytes fertilized after IVF. Result(s). Both FR and EQ in IVF cycles negatively correlated with sperm DNA fragmentation. Furthermore, a positive correlation was observed between FR and hyaluronan-binding ability or induced hyperactivity. The semen samples from the IVF cycles with low FR (group 1) were characterized by statistically significantly higher sperm DNA fragmentation and lower hyaluronan-binding ability in comparison with semen samples from the group with high levels of fertilization (group 2). In ICSI cycles, no relationship was found between sperm function tests and FR or EQ. Conclusion(s). The Halosperm test, the HBA test, and induced hyperactivity are useful in predicting the ability of spermatozoa to fertilize oocytes in IVF and are helpful in distinguishing semen samples suitable for IVF or ICSI.
		ANG	Objective. To determine the diagnostic value of the following sperm function tests in predicting the fertilizing ability of spermatozoa in conventional in vitro fertilization (IVF) and intracytoplasmic sperm injection (ICSI): hyaluronan-binding assay (HBA), DNA fragmentation (Halosperm), and hyperactivity. Design. Prospective study. Setting. University medical center. Patient(s). 133 couples undergoing infertility treatment with IVF/ICSI. Intervention(s). Analysis of sperm DNA fragmentation, hyaluronan-binding ability, and hyperactivation on washed semen samples used for the insemination of oocytes. Main Outcome Measure(s). Correlation between the results of sperm function tests and the fertilization rate (FR) or embryo quality (EQ) after IVF and ICSI. Comparison of the sperm DNA fragmentation, hyperactivation, and hyaluronan binding ability between cycles with less than 50% (group 1) and more than 50% (group 2) of oocytes fertilized after IVF. Result(s). Both FR and EQ in IVF cycles negatively correlated with sperm DNA fragmentation. Furthermore, a positive correlation was observed between FR and hyaluronan-binding ability or induced hyperactivity. The semen samples from the IVF cycles with low FR (group 1) were characterized by statistically significantly higher sperm DNA fragmentation and lower hyaluronan-binding ability in comparison with semen samples from the group with high levels of

		fertilization (group 2). In ICSI cycles, no relationship was found between sperm function tests and FR or EQ. Conclusion(s). The Halosperm test, the HBA test, and induced hyperactivity are useful in predicting the ability of spermatozoa to fertilize oocytes in IVF and are helpful in distinguishing semen samples suitable for IVF or ICSI.
	Objavljeno v	American Fertility Society; Fertility and sterility; 2013; Vol. 99, no. 5; str. 1233-1241; Impact Factor: 4.295; Srednja vrednost revije / Medium Category Impact Factor: 1.993; A': 1; WoS: SD, WF; Avtorji / Authors: Breznik Barbara, Kovačič Borut, Vlasisavljević Veljko
	Tipologija	1.01 Izvirni znanstveni članek
5.	COBISS ID	3653439 Vir: COBISS.SI
	Naslov	SLO ANG A prospective, randomized trial on the effect of atmospheric versus reduced oxygen concentration on the outcome of intracytoplasmic sperm injection cycles
	Opis	SLO ANG Objective: To assess whether the embryo cultivation at different oxygen tensions had any effect on intracytoplasmic sperm injection (ICSI) outcome. Design: Prospective randomized trial. Setting: University clinical center. Patient(s): Women undergoing ICSI (n 647). Intervention(s): Culturing of embryos, either at 6% CO₂, 5% O₂, 89% N₂, or at 6% CO₂ in air. Main Outcome Measure(s): The primary outcome was ongoing pregnancy rates (PR). Secondary outcomes: cumulative PRs, implantation, and embryo quality, for both treatment groups and clinical outcomes for subgroups (optimal cycles, poor responders, older women). Result(s): Although low oxygen resulted in a higher proportion of good day 2 embryos (0.547 +/- 0.021 vs. 0.39 +/- 0.019) and optimal blastocysts (0.162 +/- 0.199 vs. 0.083 +/- 0.128), the ongoing PRs (31.6% vs. 27.1%) and implantation rates (28.8% vs. 25.2%) were similar in both oxygen groups. Low oxygen caused a higher cumulative PR (38% vs. 28.3%) in the main group and a higher PR in the poor responder subgroup (23% vs. 9.8%) with embryo transfers performed mostly on day 3. Conclusion(s): The use of reduced oxygen in IVF is reasonable, irrespective of the duration of embryo culture. It improves embryo development and cumulative PR and is also recommended in poor responding cycles. Objective: To assess whether the embryo cultivation at different oxygen tensions had any effect on intracytoplasmic sperm injection (ICSI) outcome. Design: Prospective randomized trial. Setting: University clinical center. Patient(s): Women undergoing ICSI (n 647). Intervention(s): Culturing of embryos, either at 6% CO₂, 5% O₂, 89% N₂, or at 6% CO₂ in air. Main Outcome Measure(s): The primary outcome was ongoing pregnancy rates (PR). Secondary outcomes: cumulative PRs, implantation, and embryo quality, for both treatment groups and clinical outcomes for subgroups (optimal cycles, poor responders, older women). Result(s): Although low oxygen resulted in a higher proportion of good day 2 embryos (0.547 +/- 0.021 vs. 0.39 +/- 0.019) and optimal blastocysts (0.162 +/- 0.199 vs. 0.083 +/- 0.128), the ongoing PRs (31.6% vs. 27.1%) and implantation rates (28.8% vs. 25.2%) were similar in both oxygen groups. Low oxygen caused a higher cumulative PR (38% vs. 28.3%) in the main group and a higher PR in the poor responder subgroup (23% vs. 9.8%) with embryo transfers performed mostly on day 3. Conclusion(s): The use of reduced oxygen in IVF is reasonable, irrespective of the duration of embryo culture. It improves embryo development and cumulative PR and is also recommended in poor responding cycles.
		American Fertility Society; Fertility and sterility; 2010; Vol. 94, no. 2; str.

Objavljeno v	511-519; Impact Factor: 3.122; Srednja vrednost revije / Medium Category Impact Factor: 1.792; A': 1; WoS: SD, WF; Avtorji / Authors: Kovačič Borut, Čížek-Sajko Mojca, Vlaisavljevič Veljko
Tipologija	1.01 Izvirni znanstveni članek

7. Najpomembnejši družbeno-ekonomski rezultati programske skupine⁶

	Družbeno-ekonomski dosežek		
1.	COBISS ID	242526720	Vir: vpis v poročilo
	Naslov	SLO Članstvo v uredniškem odboru znanstvene revije revije ANG Member of editorial board of scientific journal	
	Opis	SLO 1. Fertility Research and Practice, Kovačič Borut (član uredniškega odbora 2014-) ISSN 2054-7099 2. Donald school journal of ultrasound in obstetrics and gynecology. Vlaisavljevic, Veljko (področni urednik 2008-). New Delhi: Jaypee Brothers Medical Publishers, 2007-. ISSN 0973-614X. [COBISS.SI-ID 2756927] 3. International urogynecology journal (IF=2.169). But, Igor (član uredniškega odbora 2007-2010). London: Springer Internat. ISSN 0937-3462. http://www.springerlink.com/content/102824. [COBISS.SI-ID 764180] 4. Acta medico-biotechnica. But Igor (član uredniškega odbora 2009-2013), Gregorič, Alojz (član uredniškega odbora 2009-2012), Reljič, Milan (član uredniškega odbora 2009-2013), Strojnik, Tadej (član uredniškega odbora 2009-2013). Maribor: Medicinska fakulteta, 2008-. ISSN 1855-5640. http://www.actamedbio.mf.uni-mb.si/. [COBISS.SI-ID 242526720] ANG 1. Fertility Research and Practice, Kovačič Borut (member of editorial board 2014-) ISSN 2054-7099 2. Donald school journal of ultrasound in obstetrics and gynecology. Vlaisavljevic, Veljko (področni urednik 2008-). New Delhi: Jaypee Brothers Medical Publishers, 2007-. ISSN 0973-614X. [COBISS.SI-ID 2756927] 3. International urogynecology journal (IF=2.169). But, Igor (member of editorial board 2007-2010, 2013). London: Springer Internat. ISSN 0937-3462. http://www.springerlink.com/content/102824. [COBISS.SI-ID 764180] 4. Acta medico-biotechnica. But Igor (member of editorial board 2009-2013), Gregorič, Alojz (member of editorial board 2009-2012), Reljič, Milan (member of editorial board 2009-2013), Strojnik, Tadej (member of editorial board 2009-2013). Maribor: Medical Faculty University of Maribor, 2008-. ISSN 1855-5640. http://www.actamedbio.mf.uni-mb.si/. [COBISS.SI-ID 242526720]	
	Šifra	C.04 Uredništvo mednarodne revije	
	Objavljeno v	1. http://www.fertilityresearchandpractice.com/ 2. Donald school journal of ultrasound in obstetrics and gynecology. New Delhi: Jaypee Brothers Medical Publishers, 2007-. ISSN 0973-614X. [COBISS.SI-ID 2756927] 3. International urogynecology journal (IF=2.169). London: Springer	

		Internat. ISSN 0937-3462. http://www.springerlink.com/content/102824. [COBISS.SI-ID 764180] 4. Acta medico-biotechnica. Maribor: Medical Faculty University of Maribor, 2008-. ISSN 1855-5640.	
	Tipologija	4.00 Sekundarno avtorstvo	
2.	COBISS ID	270344704	Vir: COBISS.SI
	Naslov	SLO	Mentorstvo doktorandom
		ANG	Tutoring for postgraduate students
	Opis	SLO	Mentor pri doktorskih disertacijah: 1. Vlaisavljević Veljko (mentor): KNEZ, Jure. Vpliv bisfenola A na kakovost humanih semenčic in uspeh postopka izventelesne oploditve : [doktorska disertacija]. [Ljubljana: J. Knez], 2014. XIII, 72 f., graf. prikazi, tabele. [COBISS.SI-ID 272493568] 2. Vlaisavljević Veljko (mentor): BREZNIK, Barbara. Napovedna vrednost laboratorijskih preiskav semena za oploditveno sposobnost semenčic v postopku in vitro fertilizacije : [doktorska disertacija]. Ljubljana: [B. Pregl Breznik], 2013. XV, 68 str., ilustr. [COBISS.SI-ID 270344704] 3. Kovačič Borut (mentor): IVEC, Martin. Analiza morfometrijskih in kromosomskih značilnosti počasneje razvijajočih se človeških blastocist iz postopkov oploditve z biomedicinsko pomočjo : doktorska disertacija. [Ljubljana: M. Ivec], 2012. 63 f., ilustr. [COBISS.SI-ID 260496640] 4. But Igor (mentor): PAKIŽ, Maja. Genska variabilnost v genih ESR1, CYP17A1, PTPN22 in IL23R kot dejavnik tveganja za razvoj miomov maternice : doktorska disertacija. V Ljubljani: Medicinska fakulteta, 2010. 83 str., ilustr. [COBISS.SI-ID 252331520] 5. Vlaisavljević Veljko (mentor): DARIŠ, Barbara. Vpliv enodnevne izpostavljenosti semenčic razmeram in vitro pri postopkih oploditve z biomedicinsko pomočjo na fragmentacijo DNK : doktorska disertacija. Ljubljana: [B. Dariš], 2010. XIII, 87 f., [4] f. pril., ilustr., tabele. [COBISS.SI-ID 252868608] 6. Vlaisavljević Veljko (mentor): KOVAČ, Vilma. Vpliv kliničnih in laboratorijskih dejavnikov na postopek in vitro zorenja nezrelih jajčnih celic, dobljenih s punkcijo antralnih foliklov pri bolnicah s sindromom policističnih jajčnikov : doktorska disertacija = Impact of clinical and laboratory parameters on in vitro maturation of immature oocytes, obtained with puncture of antral follicles in patients with polycystic ovarian syndrome : doctorate thesis. Ljubljana: [V. Kovač], 2009. XI, 67 f., ilustr. [COBISS.SI-ID 3193663]
			Supervisor for Doctoral Dissertations: 1. Vlaisavljević Veljko (mentor): KNEZ, Jure. Vpliv bisfenola A na kakovost humanih semenčic in uspeh postopka izventelesne oploditve : [doctorate thesis]. [Ljubljana: J. Knez], 2014. XIII, 72 f., graf. prikazi, tabele. [COBISS.SI-ID 272493568] 2. Vlaisavljević Veljko (mentor): BREZNIK, Barbara. Napovedna vrednost laboratorijskih preiskav semena za oploditveno sposobnost semenčic v postopku in vitro fertilizacije : [doctorate thesis]. Ljubljana: [B. Pregl Breznik], 2013. XV, 68 str., ilustr. [COBISS.SI-ID 270344704]

	ANG	3. Kovačič Borut (mentor): IVEC, Martin. Analiza morfometrijskih in kromosomskih značilnosti počasneje razvijajočih se človeških blastocist iz postopkov oploditve z biomedicinsko pomočjo : doctorate thesis. [Ljubljana: M. Ivec], 2012. 63 f., ilustr. [COBISS.SI-ID 260496640] 4. But Igor (mentor): PAKIŽ, Maja. Genska variabilnost v genih ESR1, CYP17A1, PTPN22 in IL23R kot dejavnik tveganja za razvoj miomov maternice : doctorate thesis. V Ljubljani: Medicinska fakulteta, 2010. 83 str., ilustr. [COBISS.SI-ID 252331520] 5. Vlasisavljevič Veljko (mentor): DARIŠ, Barbara. Vpliv enodnevnice izpostavljenosti semenčic razmeram in vitro pri postopkih oploditve z biomedicinsko pomočjo na fragmentacijo DNK : doctorate thesis. Ljubljana: [B. Dariš], 2010. XIII, 87 f., [4] f. pril., ilustr., tabele. [COBISS.SI-ID 252868608] 6. Vlasisavljevič Veljko (mentor): KOVAČ, Vilma. Vpliv kliničnih in laboratorijskih dejavnikov na postopek in vitro zorenja nezrelih jajčnih celic, dobljenih s punkcijo antralnih foliklov pri bolnicah s sindromom policističnih jajčnikov : doktorska disertacija = Impact of clinical and laboratory parameters on in vitro maturation of immature oocytes, obtained with puncture of antral follicles in patients with polycystic ovarian syndrome : doctorate thesis. Ljubljana: [V. Kovač], 2009. XI, 67 f., ilustr. [COBISS.SI-ID 3193663]	
		Šifra	D.09 Mentorstvo doktorandom
		Objavljeno v	[B. Pregl Breznik]; 2013; XV, 68 str.; Avtorji / Authors: Breznik Barbara
		Tipologija	2.08 Doktorska disertacija
		COBISS ID	Vir: vpis v poročilo
3.	Naslov	SLO	Aktivno članstvo v mednarodnih združenjih
		ANG	Active membership in foreign/international boards/committees
	Opis	SLO	Red. prof. dr. Veljko Vlasisavljevič - Član poročevalcev ESHRE/EBCOG za pridobitev akreditacij za subspecializacijo iz reproduktivne medicine na evropskih klinikah - Član delovne skupine ESHRE » Management of infertility Units«. - Član delovne skupine ESHRE/Cohrane library za pripravo » European guidelines for premature ovarian insufficiency (POI)« - Direktor Slovenian branch of Ian Donald Interuniversity School of Ultrasound Izr. prof. dr. Borut Kovačič: - Član ESHRE komisije za certificiranje kliničnih embriologov, ki vsako leto organizira evropski izpit za pridobitev certifikata Klinični embriolog. - Nacionalni predstavnik Slovenije v ESHRE (Committee of National Representatives). Red. prof. dr. Igor But: - Podpredsednik znanstvenega odbora - MIPS (Mediterranean Incontinence and Pelvic Floor Society, November 2013).

		Veljko Vlasisavljević - member of EBCOG/ESHRE (European Society of Human reproduction and Embryology team of assessors fo acreditation of infertility clinics in Europe - Member of Task force for ESHRE » Management of infertility Units«. - member of ESHRE/Cohrane group for preparation of » European guidelines for premature ovarian insuficiency (POI)« - Direktor Slovenian branch of Ian Donald Interuniversity School of Ultrasound Borut Kovačič: - member of ESHRE group for certification of senior and clinical embryologists. - National representative of Slovenia in ESHRE (Committee of National Representatives). Igor But: - Vice president of scientific commettee - MIPS (Mediterranean Incontinence and Pelvic Floor Society, November 2013).
	Šifra	D.03 Članstvo v tujih/mednarodnih odborih/komitejih
	Objavljeno v	Spletne strani mednarodnih organizacij: - ESHRE (www.eshre.eu) - MIPS (www.mipsnet.org)
	Tipologija	4.00 Sekundarno avtorstvo
4.	COBISS ID	Vir: vpis v poročilo
	Naslov	<i>SLO</i> Organizacija mednarodnega simpozija/učne delavnice <i>ANG</i> Organiser of an international scientific meeting/workshop
	Opis	<i>SLO</i> Organizacija mednarodnih simpozijev in učne delavnice: 1. organizacija treh simpozijev Evropskega združenja za humano reprodukcijo in embriologijo v Mariboru: - Patients friendly IVF (2009) - Excelence in IVF (2010) - Ultrasound in reproductive medicine (2013). 2. učne delavnice evropskega projekta IPA (Jadransko čezmejno sodelovanje IPA - Adriatic Cross Border Cooperation Programme) Future medicine: Work Shop, Transvaginal Laparoscop, 10. maj 2013. <i>ANG</i> Organiser of an international scientific meeting/workshop 1. organisation of international Campus of European Society of Human reproduction and Embryology in Maribor/Slovenia: - Patients friendly IVF (2009) - Excelence in IVF (2010) - Ultrasound in reproductive medicine (2013). 2. organisation of Workshop of European project IPA (Jadransko čezmejno sodelovanje IPA - Adriatic Cross Border Cooperation Programme) Future medicine: Workshop, Transvaginal Laparoscopy, 10. maj 2013.

5.	Šifra	B.01 Organizator znanstvenega srečanja	
	Objavljeno v	Spletne strani: - ESHRE (www.eshre.eu) in UKC Maribor (www.ukc-mb.si) - IPA (IPA - Adriatic Cross Border Cooperation Programme) (www.adriaticipacbc.org) in UKC Maribor (www.ukc-mb.si)	
	Tipologija	3.25 Druga izvedena dela	
	COBISS ID		Vir: vpis v poročilo
	Naslov	SLO	Poglavja v monografijah v tujih založbah
		ANG	Chapters in books published abroad
	Opis	SLO	1. BREZNIK, Barbara, KOVAČIČ, Borut, VLAISAVLJEVIĆ, Veljko. The role and use of hyaluronan in reproductive medicine. V: POMIN, Vitor H. (ur.). Hyaluronan : biological and medical implications, (Biochemistry research trends). New York: Nova Science Publishers, cop. 2014, str. [113]-137, ilustr. [COBISS.SI-ID 5039167] 2. KOVAČIČ, Borut, HOJNIK, Nina, VLAISAVLJEVIĆ, Veljko. The use of time lapse photography in an in vitro fertilization programme for better selection for embryo transfer. V: REYES, David (ur.), CASALES, Angelica (ur.). Embryo development : stages, mechanisms and clinical outcomes, (Human reproductive system - anatomy, roles and disorders). New York: Nova Science Publishers, cop. 2013, str. [113]-139, ilustr. [COBISS.SI-ID 4728895], [3. VLAISAVLJEVIĆ, Veljko, KNEZ, Jure, KOVAČIČ, Borut. Does the number of retrieved oocytes influence pregnancy rate after day 3 and day 5 embryo transfer?. V: WU, Bin (ur.). Advances in embryo transfer. Rijeka: InTech, cop. 2012, str. [39]-52, ilustr. [COBISS.SI-ID 4270911] 4. KOVAČIČ, Borut, VLAISAVLJEVIĆ, Veljko. Importance of blastocyst morphology in selection for transfer. V: WU, Bin (ur.). Advances in embryo transfer. Rijeka: InTech, cop. 2012, str. [161]-176. [COBISS.SI-ID 4271167] 5. VLAISAVLJEVIĆ, Veljko, KNEZ, Jure, KOVAČIČ, Borut. does embryo transfer technique and personal experience influence pregnancy rate?. V: BERHARDT, Leon V. (ur.). Advances in medicine and biology, (Advances in medicine and biology, ISSN 2157-5398, vol. 39). New York: Nova Science, cop. 2012, str. [237]-252. [COBISS.SI-ID 4324671] 6. KRIŽANČIĆ BOMBEK, Lidija, KOVAČIČ, Borut, VLAISAVLJEVIĆ, Veljko. Morphology and aneuploidy of in vitro matured (IVM) human oocytes. V: STORCHOVA, Zuzana (ur.). Aneuploidy in health and disease. Rijeka: InTech, cop. 2012, str. [163]-192, ilustr. [COBISS.SI-ID 4336447] 7. KOVAČIČ, Borut. Culture systems : low-oxygen culture. V: SMITH, Gary D. (ur.), SWAIN, Jason E. (ur.), POOL, Thomas B. (ur.). Embryo culture : methods and protocols, (Methods in molecular biology, ISSN 1940-6029, 912). New York [etc.]: Humana Press, cop. 2012, str. 249-272. [COBISS.SI-ID 4375615], 8. VLAISAVLJEVIĆ, Veljko, DOŠEN, Marko, KOVAČIČ, Borut. Embryo quality and pregnancy outcome in infertile patients with endometriosis. V: CHAUDHURY, Koel (ur.), CHAKRAVARTY, Baidyanath (ur.). Endometriosis - basic concepts and current research trends. Rijeka: InTech, 2012, str. [383]-398.. [COBISS.SI-ID 4271935] 9. KNEZ, Jure, KOVAČIČ, Borut, VLAISAVLJEVIĆ, Veljko. Effectiveness of Slovenian health insurance reimbursement policy in twin's rate reduction in medically assisted reproduction. V: DUPONT, Maison (ur.), RENAUD, Jean-Pierre (ur.). Siblings : social adjustments, interaction, and family dynamics, (Children's issues, laws and programs). New York: Nova Science Publisher's, cop. 2012, str. 125-140, ilustr. [COBISS.SI-ID 4454719] 10. STROJNIK, Tadej. Prognostic significance of immunohistochemical markers in glioma patients. V: CHEN, Clark C. (ur.). Advances in the

		biology, imaging and therapies for glioblastoma. Rijeka: InTech, 2011, str. [77]-106.. [COBISS.SI-ID 4099647] 11. VLAISAVLJEVIĆ, Veljko, DOŠEN, Marko. Ultrasound in human reproduction. V: KURJAK, Asim (ur.), CHERVENAK, Frank A. (ur.). Donald school textbook of ultrasound in obstetrics and gynecology. 3rd ed. New Delhi; Panama City; London: Jaypee Brothers Medical Publishers, cop. 2011, str. [818]-828. [COBISS.SI-ID 3935039] 12. VLAISAVLJEVIĆ, Veljko, ZAZULA, Damjan. Quantitative measurements of perifollicular blood volume on 3D power Doppler image of preovulatory follicle after HCG administration. V: RADUNOVIĆ, Nebojša (ur.). Ultrasound in Obstetrics and Gynecology : what is new?. Belgrade: Novi Astakos, 2011, str. 305-310. [COBISS.SI-ID 4046143] 13. KOVAČIČ, Borut, VLAISAVLJEVIĆ, Veljko. The use of pentoxifylline for triggering the movement of testicular sperm before their use in intracytoplasmic sperm injection in men with azoospermia. V: LEJEUNE, Thomas (ur.), DELVAUX, Pascal (ur.). Human spermatozoa : maturation, capacitation and abnormalities, (Human reproductive system - anatomy, roles, and disorders series). New York: Nova Science, cop. 2010, str. 355-378. [COBISS.SI-ID 3653951] 14. KOMIĆ, Sabahudin, DŽANIĆ, Dževad, BUT, Igor. Sindrom hiperaktivnog mjehura. V: TOMAŽEVIČ, Tomaž (ur.), et al. Mikroinvazivna kirurgija u ginekologiji. Bihać: Grafičar, 2010, str. 385-394, ilustr. [COBISS.SI-ID 27215321] 15. MARČUN-VARDA, Nataša, GREGORIČ, Alojz. Genetic studies in pediatric stroke : chapter 12. V: MORATINOS, Cristina (ur.), CÁRDENAS, Bruno (ur.). Hypertension, heredity, and stroke. Hauppauge, NY: Nova Science Publishers, cop. 2009, str. 163-171. [COBISS.SI-ID 3360575]
		1. BREZNIK, Barbara, KOVAČIČ, Borut, VLAISAVLJEVIĆ, Veljko. The role and use of hyaluronan in reproductive medicine. V: POMIN, Vitor H. (ur.). Hyaluronan : biological and medical implications, (Biochemistry research trends). New York: Nova Science Publishers, cop. 2014, str. [113]-137, ilustr. [COBISS.SI-ID 5039167] 2. KOVAČIČ, Borut, HOJNIK, Nina, VLAISAVLJEVIĆ, Veljko. The use of time lapse photography in an in vitro fertilization programme for better selection for embryo transfer. V: REYES, David (ur.), CASALES, Angelica (ur.). Embryo development : stages, mechanisms and clinical outcomes, (Human reproductive system - anatomy, roles and disorders). New York: Nova Science Publishers, cop. 2013, str. [113]-139, ilustr. [COBISS.SI-ID 4728895], [3. VLAISAVLJEVIĆ, Veljko, KNEZ, Jure, KOVAČIČ, Borut. Does the number of retrieved oocytes influence pregnancy rate after day 3 and day 5 embryo transfer?. V: WU, Bin (ur.). Advances in embryo transfer. Rijeka: InTech, cop. 2012, str. [39]-52, ilustr. [COBISS.SI-ID 4270911] 4. KOVAČIČ, Borut, VLAISAVLJEVIĆ, Veljko. Importance of blastocyst morphology in selection for transfer. V: WU, Bin (ur.). Advances in embryo transfer. Rijeka: InTech, cop. 2012, str. [161]-176. [COBISS.SI-ID 4271167] 5. VLAISAVLJEVIĆ, Veljko, KNEZ, Jure, KOVAČIČ, Borut. does embryo transfer technique and personal experience influence pregnancy rate?. V: BERHARDT, Leon V. (ur.). Advances in medicine and biology, (Advances in medicine and biology, ISSN 2157-5398, vol. 39). New York: Nova Science, cop. 2012, str. [237]-252. [COBISS.SI-ID 4324671] 6. KRIŽANČIĆ BOMBEK, Lidija, KOVAČIČ, Borut, VLAISAVLJEVIĆ, Veljko. Morphology and aneuploidy of in vitro matured (IVM) human oocytes. V: STORCHOVA, Zuzana (ur.). Aneuploidy in health and disease. Rijeka: InTech, cop. 2012, str. [163]-192, ilustr. [COBISS.SI-ID 4336447] 7. KOVAČIČ, Borut. Culture systems : low-oxygen culture. V: SMITH, Gary D. (ur.), SWAIN, Jason E. (ur.), POOL, Thomas B. (ur.). Embryo culture : methods and protocols, (Methods in molecular biology, ISSN 1940-6029,

	ANG	912). New York [etc.]: Humana Press, cop. 2012, str. 249-272. [COBISS.SI-ID 4375615], 8. VLAISAVLJEVIĆ, Veljko, DOŠEN, Marko, KOVAČIČ, Borut. Embryo quality and pregnancy outcome in infertile patients with endometriosis. V: CHAUDHURY, Koel (ur.), CHAKRAVARTY, Baidyanath (ur.). Endometriosis - basic concepts and current research trends. Rijeka: InTech, 2012, str. [383]-398.. [COBISS.SI-ID 4271935] 9. KNEZ, Jure, KOVAČIČ, Borut, VLAISAVLJEVIĆ, Veljko. Effectiveness of Slovenian health insurance reimbursement policy in twin's rate reduction in medically assisted reproduction. V: DUPONT, Maison (ur.), RENAUD, Jean-Pierre (ur.). Siblings : social adjustments, interaction, and family dynamics, (Children's issues, laws and programs). New York: Nova Science Publisher's, cop. 2012, str. 125-140, ilustr. [COBISS.SI-ID 4454719] 10. STROJNIK, Tadej. Prognostic significance of immunohistochemical markers in glioma patients. V: CHEN, Clark C. (ur.). Advances in the biology, imaging and therapies for glioblastoma. Rijeka: InTech, 2011, str. [77]-106.. [COBISS.SI-ID 4099647] 11. VLAISAVLJEVIĆ, Veljko, DOŠEN, Marko. Ultrasound in human reproduction. V: KURJAK, Asim (ur.), CHERVENAK, Frank A. (ur.). Donald school textbook of ultrasound in obstetrics and gynecology. 3rd ed. New Delhi; Panama City; London: Jaypee Brothers Medical Publishers, cop. 2011, str. [818]-828. [COBISS.SI-ID 3935039] 12. VLAISAVLJEVIĆ, Veljko, ZAZULA, Damjan. Quantitative measurements of perifollicular blood volume on 3D power Doppler image of preovulatory follicle after HCG administration. V: RADUNOVIĆ, Nebojša (ur.). Ultrasound in Obstetrics and Gynecology : what is new?. Belgrade: Novi Astakos, 2011, str. 305-310. [COBISS.SI-ID 4046143] 13. KOVAČIČ, Borut, VLAISAVLJEVIĆ, Veljko. The use of pentoxifylline for triggering the movement of testicular sperm before their use in intracytoplasmic sperm injection in men with azoospermia. V: LEJEUNE, Thomas (ur.), DELVAUX, Pascal (ur.). Human spermatozoa : maturation, capacitation and abnormalities, (Human reproductive system - anatomy, roles, and disorders series). New York: Nova Science, cop. 2010, str. 355-378. [COBISS.SI-ID 3653951] 14. KOMIĆ, Sabahudin, DŽANIĆ, Dževad, BUT, Igor. Sindrom hiperaktivnog mjehura. V: TOMAŽEVIĆ, Tomaž (ur.), et al. Mikroinvazivna kirurgija u ginekologiji. Bihać: Grafičar, 2010, str. 385-394, ilustr. [COBISS.SI-ID 27215321] 15. MARČUN-VARDA, Nataša, GREGORIČ, Alojz. Genetic studies in pediatric stroke : chapter 12. V: MORATINOS, Cristina (ur.), CÁRDENAS, Bruno (ur.). Hypertension, heredity, and stroke. Hauppauge, NY: Nova Science Publishers, cop. 2009, str. 163-171. [COBISS.SI-ID 3360575]
Šifra	F.18	Posredovanje novih znanj neposrednim uporabnikom (seminarji, forumi, konference)
		1. POMIN, Vitor H. (ur.). Hyaluronan : biological and medical implications, (Biochemistry research trends). New York: Nova Science Publishers, cop. 2014, str. [113]-137, ilustr. [COBISS.SI-ID 5039167] 2. REYES, David (ur.), CASALES, Angelica (ur.). Embryo development : stages, mechanisms and clinical outcomes, (Human reproductive system - anatomy, roles and disorders). New York: Nova Science Publishers, cop. 2013, str. [113]-139, ilustr. [COBISS.SI-ID 4728895], [3. WU, Bin (ur.). Advances in embryo transfer. Rijeka: InTech, cop. 2012, str. [39]-52, ilustr. [COBISS.SI-ID 4270911] 4. WU, Bin (ur.). Advances in embryo transfer. Rijeka: InTech, cop. 2012, str. [161]-176. [COBISS.SI-ID 4271167] 5. BERHARDT, Leon V. (ur.). Advances in medicine and biology, (Advances in medicine and biology, ISSN 2157-5398, vol. 39). New York: Nova Science, cop. 2012, str. [237]-252. [COBISS.SI-ID 4324671]

	Objavljeno v	6. STORCHOVA, Zuzana (ur.). Aneuploidy in health and disease. Rijeka: InTech, cop. 2012, str. [163]-192, ilustr. [COBISS.SI-ID 4336447] 7. SMITH, Gary D. (ur.), SWAIN, Jason E. (ur.), POOL, Thomas B. (ur.). Embryo culture : methods and protocols, (Methods in molecular biology, ISSN 1940-6029, 912). New York [etc.]: Humana Press, cop. 2012, str. 249-272. [COBISS.SI-ID 4375615], 8. CHAUDHURY, Koel (ur.), CHAKRAVARTY, Baidyanath (ur.). Endometriosis - basic concepts and current research trends. Rijeka: InTech, 2012, str. [383]-398.. [COBISS.SI-ID 4271935] 9. DUPONT, Maison (ur.), RENAUD, Jean-Pierre (ur.). Siblings : social adjustments, interaction, and family dynamics, (Children's issues, laws and programs). New York: Nova Science Publisher's, cop. 2012, str. 125-140, ilustr. [COBISS.SI-ID 4454719] 10. CHEN, Clark C. (ur.). Advances in the biology, imaging and therapies for glioblastoma. Rijeka: InTech, 2011, str. [77]-106.. [COBISS.SI-ID 4099647] 11. KURJAK, Asim (ur.), CHERVENAK, Frank A. (ur.). Donald school texbook of ultrasound in obstetrics and gynecology. 3rd ed. New Delhi; Panama City; London: Jaypee Brothers Medical Publishers, cop. 2011, str. [818]-828. [COBISS.SI-ID 3935039] 12. RADUNOVIĆ, Nebojša (ur.). Ultrasound in Obstetrics and Gynecology : what is new?. Belgrade: Novi Astakos, 2011, str. 305-310. [COBISS.SI-ID 4046143] 13. LEJEUNE, Thomas (ur.), DELVAUX, Pascal (ur.). Human spermatozoa : maturation, capacitation and abnormalities, (Human reproductive system - anatomy, roles, and disorders series). New York: Nova Science, cop. 2010, str. 355-378. [COBISS.SI-ID 3653951] 14. TOMAŽEVIČ, Tomaž (ur.), et al. Mikroinvazivna kirurgija u ginekologiji. Bihać: Grafičar, 2010, str. 385-394, ilustr. [COBISS.SI-ID 27215321] 15. MORATINOS, Cristina (ur.), CÁRDENAS, Bruno (ur.). Hypertension, heredity, and stroke. Hauppauge, NY: Nova Science Publishers, cop. 2009, str. 163-171. [COBISS.SI-ID 3360575]
	Tipologija	1.16 Samostojni znanstveni sestavek ali poglavje v monografski publikaciji

8. Drugi pomembni rezultati programske skupine²

Člani programske skupine v obdobju 2009-2014 so habilitirani učitelji in predavatelji na Univerzi v Mariboru ali Ljubljani: Red. prof. dr. Veljko Vlaisavljević, Red. prof. dr. Igor But, Red. prof. dr. Tadej Strojnik, Red. prof. dr. Alojz Gregorič, Izr. prof. dr. Borut Kovačič, Izr. prof. dr. Milan Reljič, Doc. dr. Vilma Kovač, Doc. dr. Vida Gavrić-Lovrec, Univerzitetni, visokošolski ali višješolski učbenik z recenzijo 1. BOŠNJAK, Roman,..., STROJNIK, Tadej (glavni urednik). Izbrana poglavja iz nevrokirurgije. 1. izd. Maribor: Medicinska fakulteta, 2010. 340 str., ilustr. ISBN 978-961-6739-15-3. [COBISS.SI-ID 65527553] Elaborat, predštudija, študija 1. MEDEN-VRTOVEC, Helena, ... VLAISAVLJEVIĆ, Veljko. Racionalizacija mreže porodnišnic v
--

Sloveniji. Ljubljana: Delovna skupina Ministrstva za zdravje za racionalizacijo mreže porodnišnic, 23. 9. 2009. 20 f., ilustr. [COBISS.SI-ID 3410239]

Patent

1. DRSTVENŠEK, Igor, STROJNIK, Tadej. Naprava za mikro pozicioniranje instrumenta na stereotaktičnem sistemu : patent : SI 23168 (A), 2011-04-29. Ljubljana: Urad Republike Slovenije za intelektualno lastnino, 2011. ilustr., 21 str. [COBISS.SI-ID 3976511]

Predavanje na tuji univerzi

1. STROJNIK, Tadej. CEEPUS teacher at:

- University of Novi Sad, Faculty of Technical Sciences, within the framework of CIII-SI-0206-05-1112, Novi Sad, 1. 6.-30. 6. 2012]. Novi Sad, 2012. [COBISS.SI-ID 4350271].

- Wien, 1. 4.-30. 4. 2012]. Wien, 2012. [COBISS.SI-ID 4264255]

- "Iuliu Hatieganu" University of medicine and pharmacy, Cluj-Napoca, Romania, 17th April-2nd May, 2010]. Cluj-Napoca, 2010. [COBISS.SI-ID 3625023]

Vabljeni predavanja na kongresih: ravidno iz COBISSa.

9.Pomen raziskovalnih rezultatov programske skupine⁸

9.1.Pomen za razvoj znanosti²

SLO

Rezultati pomenijo nova bazična spoznanja na področju fiziologije človeških spolnih celic in zarodkov ter na področju reproduktivne medicine, ginekologije, pediatrije in nevrokirurgije. Večina izsledkov raziskovalnega programa predstavlja izhodišča za nadaljnje raziskave, kar dokazuje tudi visoka stopnja citiranosti naših objav. Prav zato raziskovalno delo nadaljujemo v okviru novega programa na istem področju.

ANG

The results represent a new basic knowledge about the physiology of human gametes and embryos and new insights in the field of reproductive medicine, gynecology, pediatrics, and neurosurgery. Most of the results of the research program represent a starting point for further research, as is evident also by the high rate of citations of our publications. The work is continuing within a new research program in the same field.

9.2.Pomen za razvoj Slovenije¹⁰

SLO

Raziskovalna spoznanja smo v večini primerov prenesli v klinično delo. Funkcionalni testi semenčic so postali razširjena oblika diagnostike moške neplodnosti. Tudi spremljanje dinamike razvoja zarodkov in vitro s presledkovnim fotografiranjem je postala rutinska metoda v postopkih IVF in omogoča izbor zarodkov z bolj pravilnim embrionalnim razvojem za prenos v maternico. Hipoksični pogoji kultiviranja zarodkov so se izkazali še posebno koristni pri pacientih z manjšim številom zarodkov. Pri njih se je uspešnost zdravljenja neplodnosti s postopki IVF zato tudi izboljšala. Uvajanje imunohistokemijskega barvanja prognostičnih markerjev nudi izbor optimalne oblike zdravljenja za posameznega bolnika z malignim gliomom. Prikazali smo tudi pomen povišanih vnetnih kazalcev pri bolnikih z gliomi za preživetje. Poskušamo tudi pojasniti prisotnost virusov in bakterij v možganskih tumorjih. Neposredno predstavljajo rezultati programa prispevek k izboljšanju človeškega zdravja na področju človeške reprodukcije, ginekologije, pediatrije in nevrokirurgije. Posredno pa pomeni razvoj novih strokovnih smernic, izobraževanje kadrov na dodiplomskem in podiplomskem nivoju.

ANG

In most cases the research findings are implemented into clinical work. Functional tests of sperm have become a widespread method in male infertility diagnosis. In addition, monitoring of embryo development in vitro by time-lapse photography has become a routine method which allows better selection of embryos with a more proper embryonic development. Hypoxic embryo culture conditions are particularly useful in patients with a smaller number of embryos. In this

population the success of infertility treatment with IVF has significantly improved. New immunohistochemical staining was introduced into clinical practice. The immunohistochemical staining of different tumor markers helps us to choose the optimal treatment for the individual patients with malignant glioma. Our clinical study has shown a prognostic value of inflammation markers in patients with brain tumors. Currently we are investigating the possible link between the latent infection and tumorigenesis. Directly, the results of the program contribute to the improvement of human health in the field of human reproduction, gynecology, pediatrics, and neurosurgery. Indirectly, it helps in development of new professional guidelines and education of personnel at the undergraduate and postgraduate levels.

10. Zaključena mentorstva članov programske skupine pri vzgoji kadrov v obdobju 1.1.2009-31.12.2014¹¹

10.1. Diplome¹²

vrsta usposabljanja	število diplom
bolonjski program - I. stopnja	7
bolonjski program - II. stopnja	3
univerzitetni (stari) program	0

10.2. Magisterij znanosti in doktorat znanosti¹³

Šifra raziskovalca	Ime in priimek	Mag.	Dr.	MR	
33092	Jure Knez	☐	☒	☒	
28403	Barbara Pregl Breznik	☐	☒	☒	
29590	Martin Ivec	☐	☒	☒	
29647	Maja Pakiž	☐	☒	☐	
0	Barbara Dariš	☐	☒	☐	
20136	Vilma Kovač	☐	☒	☐	
0	Andreja Dvoršak Erker	☒	☐	☐	

Legenda:

Mag. - Znanstveni magisterij

Dr. - Doktorat znanosti

MR - mladi raziskovalec

11. Pretok mladih raziskovalcev – zaposlitev po zaključenem usposabljanju¹⁴

Šifra raziskovalca	Ime in priimek	Mag.	Dr.	Zaposlitev	
33092	Jure Knez	☐	☒	D - Javni zavod	
28403	Barbara Pregl Breznik	☐	☒	E - Tujina	
29590	Martin Ivec	☐	☒	E - Tujina	

Legenda zaposlitev:

A - visokošolski in javni raziskovalni zavodi

B - gospodarstvo

C - javna uprava

D - družbene dejavnosti

E - tujina

F - drugo

12.Vključenost raziskovalcev iz podjetij in gostovanje raziskovalcev, podoktorandov ter študentov iz tujine, daljše od enega meseca, v obdobju 1.1.2009-31.12.2014

Šifra raziskovalca	Ime in priimek	Sodelovanje v programski skupini	Število mesecev	
		▼		

Legenda sodelovanja v programski skupini:

- A** - raziskovalec/strokovnjak iz podjetja
- B** - uveljavljeni raziskovalec iz tujine
- C** - študent – doktorand iz tujine
- D** - podoktorand iz tujine

13.Vključevanje v raziskovalne programe Evropske unije in v druge mednarodne raziskovalne in razvojne programe ter drugo mednarodno sodelovanje v obdobju 1.1.2009-31.12.2014¹⁵

SLO

Jadransko čezmejno sodelovanje IPA - Adriatic Cross Border Cooperation Programme**Nosilec v Sloveniji : prof. V. Vlasisavljević**

Naslov projekta: FUTURE MEDICINE – PROPOSAL FOR THE ESTABLISHMENT OF A CROSS BORDER ADRIATIC CLINICAL NETWORK OF CENTERS FOR MEDICALLY ASSISTED REPRODUCTION AND REGENERATIVE MEDICINE.

Sodelujoče organizacije pri projektu:

1. Single Operational Unit of the department of Human Reproductive Pathophysiology and Fivert, Civic Hospital »S. Salvatore«, L'Aquila, Italy (vodilna organizacija);
2. Emanuele e Anna De Gennaro Foundation, Bari, Italy;
3. University Clinical Centre in Sarajevo, Obstetrics and Gynaecology Hospital, Sarajevo, Bosnia Herzegovina;
4. University Hospital Rijeka, Department of Obstetrics and Gynecology, Rijeka, Croatia;
5. Department of Obstetrics and Gynecology Clinical Center of Serbia, Belgrade, Serbia;
6. University of Hospital for Obstetrics & Gynecology: Koco Gliozheni«, Tirana, Albania;
7. Cooperation and Development Institute, Tirana, Albania;
8. City of San Valentino in Abruzzo Citeriore, San Valentino in A.c., Italy;
9. University Hospital of Bari, Department of Obstetrics and Gynecology, Unit of Pathophysiology of Human Reproduction and Gametes Cryopreservation, Bari, Italy;
10. University Clinical Centre Maribor, Department for Reproductive medicine, Maribor, Slovenia (vodja v UKC Maribor: prof. dr. Veljko Vlasisavljević).

Trajanje projekta: 1.10.2011-28.2.2014

Iniciativa EUREKA – mednarodni raziskovalni in razvojni projekti

Naslov projekta: NANOFUNTAMPONS - Nano-functionalised tampons for gynaecological use.

Sodelujoče organizacije pri projektu:

1. Univerza v Mariboru, Fakulteta za strojništvo (vodilna organizacija);
2. Univerzitetni klinični center Maribor (vodja projekta v UKC Maribor: prof. dr. Igor But);
3. Kemijski inštitut Ljubljana;
4. Univerza v Ljubljani;
5. TOSAMA d.d.;
6. Institute of Biopolymers and Chemical Fibres, Poland.

Trajanje projekta: 19.10.2011 - 31.07.2013

Klinične raziskave (prof. dr. Igor But):

BESIDE je randomizirana, dvojno slepa, multicentrična evropska raziskava za oceno učinkovitosti in vamosti dodajanja zdravila mirabegron zdravilu solifenacin pri inkontinentnih bolnikih s prekomerno aktivnim sečnim mehurjem (PASM). Sponzor: Astellas Europe

CAPTURE je mednarodna prospektivna, multicentrična svetovna raziskava, V raziskavi sodeluje 150 mednarodnih centrov. Pacientke bomo spremljali 5 let in presojali učinkovitost in prenosljivost vgrajenih materialov. Sponzor: AMS, Minnesota

PREMYA je prospektivna multicentrična neintervencijska evropska raziskava (150 centrov iz različnih evropskih držav) pri ženskah, zdravljenih z zdravilom ESMYA (ulipristal acetat) za zdravljenje zmernih do hudih simptomov miomov maternice. Sponzor: Quintiles Švica.

14. Vključenost v projekte za uporabnike, ki so v obdobju trajanja raziskovalnega programa (1.1.2009–31.12.2014) potekali izven financiranja ARRS¹⁶

SLO

Klinične raziskave (red. prof. Igor But) (glej točko 13) in projekti TERCIARja (red. prof. Veljko Vlaisavljevič, izr. prof. Borut Kovačič, red. prof. Igor But, izr. prof. Milan Reljič, red. prof. Tadej Strojnik, doc. dr. Vilma Kovač, dr. Jure Knez).

15. Ocena tehnološke zrelosti rezultatov raziskovalnega programa in možnosti za njihovo implementacijo v praksi (točka ni namenjena raziskovalnim programom s področij humanističnih ved)¹⁷

SLO

Številni rezultati, ki smo jih razvili in evaluirali v raziskovalnem programu so danes v redni klinični praksi. Nekateri so pomenili tudi prenos novih tehnologij iz tujine v naše okolje (IVM) ali uvajanje novih diagnostičnih postopkov (določevanje genske osnove za nekatera obolenja, diagnostika funkcionalne sposobnosti semenčic, analiza neugodnih vplivov iz okolja na oploditveno sposobnost, nove tehnologije v laboratorijih za MAR, ipd). Podrobnejši podatki so razvidni v bogati bibliografiji programske

skupine.

16. Ocenite, ali bi doseženi rezultati v okviru programa lahko vodili do ustanovitve spin-off podjetja, kolikšen finančni vložek bi zahteval ta korak ter kakšno infrastrukturo in opremo bi potrebovali

možnost ustanovitve spin-off podjetja	☐ DA ☒ NE
potrebni finančni vložek	EUR
ocena potrebne infrastrukture in opreme ¹⁸	

17. Izjemni dosežek v letu 2014¹⁹

17.1. Izjemni znanstveni dosežek

Visoka odmevnost poglavja v monografiji:

KOVAČIČ, Borut, VLAISAVLJEVIĆ, Veljko. Importance of blastocyst morphology in selection for transfer. V: WU, Bin (ur.). Advances in embryo transfer. Rijeka: InTech, cop. 2012, str. [161]-176. <http://www.intechopen.com/books/advances-in-embryo-transfer/importance-of-blastocyst-morphology-in-selection-for-transfer>. [COBISS.SI-ID 4271167]
Dokazilo je v priponki : Your Chapter has reached 15000 downloads.

17.2. Izjemni družbeno-ekonomski dosežek

V obdobju izvajanja raziskovalnega programa smo organizirali 3 simpozije Evropskega združenja za humano reprodukcijo in embriologijo v Mariboru z naslovi:

1. Patient friendly IVF (2009)
2. Excellence in IVF (2010)
3. Ultrasound in reproductive medicine (2013)

Organizacija učne delavnice evropskega projekta Jadransko čezmejno sodelovanje IPA - Adriatic Cross Border Cooperation Programme: naslov projekta: FUTURE MEDICINE

Dokazilo je v priponki.

C. IZJAVE

Podpisani izjavljam/o, da:

- so vsi podatki, ki jih navajamo v poročilu, resnični in točni;
- se strinjamo z obdelavo podatkov v skladu z zakonodajo o varstvu osebnih podatkov za potrebe ocenjevanja in obdelavo teh podatkov za evidence ARRS;
- so vsi podatki v obrazcu v elektronski obliki identični podatkom v obrazcu v papirnati obliki;
- so z vsebino poročila seznanjeni in se strinjajo vsi izvajalci raziskovalnega programa.

Podpisi:

*zastopnik oz. pooblaščen oseba
matične RO (JRO in/ali RO s
koncesijo):*

in

vodja raziskovalnega programa:

Univerzitetni klinični center Maribor

Borut Kovačič

ŽIG

Kraj in datum:

Maribor,	9.3.2015
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Oznaka poročila: ARRS-RPROG-ZP-2015/119

¹ Napišite povzetek raziskovalnega programa v slovenskem jeziku (največ 3.000 znakov vključno s presledki – približno pol strani, velikost pisave 11) in angleškem jeziku (največ 3.000 znakov vključno s presledki – približno pol strani, velikost pisave 11). [Nazaj](#)

² Napišite kratko vsebinsko poročilo, v katerem predstavite raziskovalno hipotezo in opis raziskovanja. Navedite ključne ugotovitve, znanstvena spoznanja, rezultate in učinke raziskovalnega programa in njihovo uporabo ter sodelovanje s tujimi partnerji. V primeru odobrenega povečanja obsega financiranja raziskovalnega programa v letu 2014 mora poročilo o realizaciji programa dela zajemati predložen program dela ob prijavi in predložen dopolnjen program dela v letu 2014. Največ 12.000 znakov vključno s presledki (približno dve strani, velikosti pisave 11). [Nazaj](#)

³ Realizacija raziskovalne hipoteze. Največ 3.000 znakov vključno s presledki (približno pol strani, velikosti pisave 11). [Nazaj](#)

⁴ V primeru bistvenih odstopanj in sprememb od predvidenega programa dela raziskovalnega programa, kot je bil zapisan v predlogu raziskovalnega programa oziroma v primeru sprememb, povečanja ali zmanjšanja sestave programske skupine v zadnjem letu izvajanja raziskovalnega programa, napišite obrazložitev. V primeru, da sprememb ni bilo, navedite: "Ni bilo sprememb.". Največ 6.000 znakov vključno s presledki (približno ena stran, velikosti pisave 11). [Nazaj](#)

⁵ Navedite znanstvene dosežke (največ pet), ki so nastali v okviru izvajanja raziskovalnega programa. Raziskovalni dosežek iz obdobja izvajanja programa vpišete tako, da izpolnite COBISS kodo dosežka – sistem nato sam izpolni naslov objave, naziv, IF in srednjo vrednost revije, naziv FOS področja ter podatek, ali je dosežek uvrščen v A" ali A'. [Nazaj](#)

⁶ Navedite družbeno-ekonomske dosežke (največ pet), ki so nastali v okviru izvajanja raziskovalnega programa. Družbeno-ekonomski dosežek iz obdobja izvajanja programa vpišete tako, da izpolnite COBISS kodo dosežka – sistem nato sam izpolni naslov objave, naziv, IF in srednjo vrednost revije, naziv FOS področja ter podatek, ali je dosežek uvrščen v A" ali A'.

Družbeno-ekonomski dosežek je po svoji strukturi drugačen kot znanstveni dosežek. Povzetek znanstvenega dosežka je praviloma povzetek bibliografske enote (članka, knjige), v kateri je dosežek objavljen.

Povzetek družbeno-ekonomskega dosežka praviloma ni povzetek bibliografske enote, ki ta dosežek dokumentira, ker je dosežek sklop več rezultatov raziskovanja, ki je lahko dokumentiran v različnih bibliografskih enotah. COBISS ID zato ni enoznačen, izjemoma pa ga lahko tudi ni (npr. prehod mlajših sodelavcev v gospodarstvo na pomembnih raziskovalnih nalogah, ali ustanovitev podjetja kot rezultat programa ... - v obeh primerih ni COBISS ID). [Nazaj](#)

⁷ Navedite rezultate raziskovalnega programa iz obdobja izvajanja programa v primeru, da katerega od rezultatov ni mogoče navesti v točkah 6 in 7 (npr. ker se ga v sistemu COBISS ne vodi). Največ 2.000 znakov vključno s presledki (približno 1/3 strani, velikost pisave 11). [Nazaj](#)

⁸ Pomen raziskovalnih rezultatov za razvoj znanosti in za razvoj Slovenije bo objavljen na spletni strani: <http://www.sicris.si/> za posamezen program, ki je predmet poročanja. [Nazaj](#)

⁹ Največ 4.000 znakov vključno s presledki (približno 2/3 strani, velikost pisave 11). [Nazaj](#)

¹⁰ Največ 4.000 znakov vključno s presledki (približno 2/3 strani, velikost pisave 11). [Nazaj](#)

¹¹ Upoštevalo se le tiste diplome, magisteriji znanosti in doktorati znanosti (zaključene/i v obdobju 1.1.2009–31.12.2014), pri katerih so kot mentorji sodelovali člani programske skupine. [Nazaj](#)

¹² Vpišite število opravljenih diplom v času izvajanja raziskovalnega programa glede na vrsto usposabljanja. [Nazaj](#)

¹³ Vpišite šifro raziskovalca in/ali ime in priimek osebe, ki je v času izvajanja raziskovalnega programa pridobila naziv magister znanosti in/ali doktor znanosti ter označite doseženo izobrazbo. V primeru, da se je oseba usposabljala po programu Mladi raziskovalci, označite "MR". [Nazaj](#)

¹⁴ Za mlade raziskovalce, ki ste jih navedli v tabeli 11.2. točke (usposabljanje so uspešno zaključili v obdobju od 1.1.2009 do 31.12.2014), izberite oz. označite, kje so se zaposlili po zaključenem usposabljanju. [Nazaj](#)

¹⁵ Navedite naslove projektov in ime člana programske skupine, ki je bil vodja/koordinator navedenega projekta. Največ 6.000 znakov vključno s presledki (približno ena stran, velikosti pisave 11). [Nazaj](#)

¹⁶ Navedite naslove projektov, ki ne sodijo v okvir financiranja ARRS (npr: industrijski projekti, projekti za druge naročnike, državno upravo, občine idr.) in ime člana programske skupine, ki je bil vodja/koordinator navedenega projekta. Največ 6.000 znakov vključno s presledki (približno ena stran, velikosti pisave 11). [Nazaj](#)

Opišite možnosti za uporabo rezultatov v praksi. Opišite izdelke oziroma tehnologijo in potencialne trge oziroma tržne niše, v katere sodijo. Ocenite dodano vrednost izdelkov, katerih osnova je znanje, razvito v okviru programa oziroma dodano vrednost na zaposlenega, če jo je mogoče oceniti (npr. v primerih, ko je rezultat izboljšava obstoječih tehnologij oziroma izdelkov). Največ 3.000 znakov vključno s presledki (približno pol strani, velikosti pisave 11). [Nazaj](#)

¹⁸ Največ 1.000 znakov vključno s presledki (približno 1/6 strani, velikost pisave 11) [Nazaj](#)

¹⁹ Navedite en izjemni znanstveni dosežek in/ali en izjemni družbeno-ekonomski dosežek raziskovalnega programa v letu 2014 (največ 1000 znakov, vključno s presledki, velikost pisave 11). Za dosežek pripravite diapozitiv, ki vsebuje sliko ali drugo slikovno gradivo v zvezi z izjemnim dosežkom (velikost pisave najmanj 16, približno pol strani) in opis izjemnega dosežka (velikost pisave 12, približno pol strani). Diapozitiv/-a priložite kot priponko/-i k temu poročilu. Vzorec diapozitiva je objavljen na spletni strani ARRS <http://www.arrs.gov.si/sl/gradivo/>, predstavitev dosežkov za pretekla leta pa so objavljena na spletni strani <http://www.arrs.gov.si/sl/analize/dosez/>. [Nazaj](#)

Obrazec: ARRS-RPROG-ZP/2015 v1.00b

86-4E-17-98-EA-2C-C3-C4-00-DD-DE-24-74-36-27-68-9C-16-9A-57

Priloga 1

Veda: MEDICINA

Področje: 3.05 REPRODUKCIJA ČLOVEKA

Raziskovalni program: P3-0327 Reprodukcijska človeka – eksperimentalni in laboratorijski vidiki

Vodja programa: izr. prof. dr. Borut Kovačič

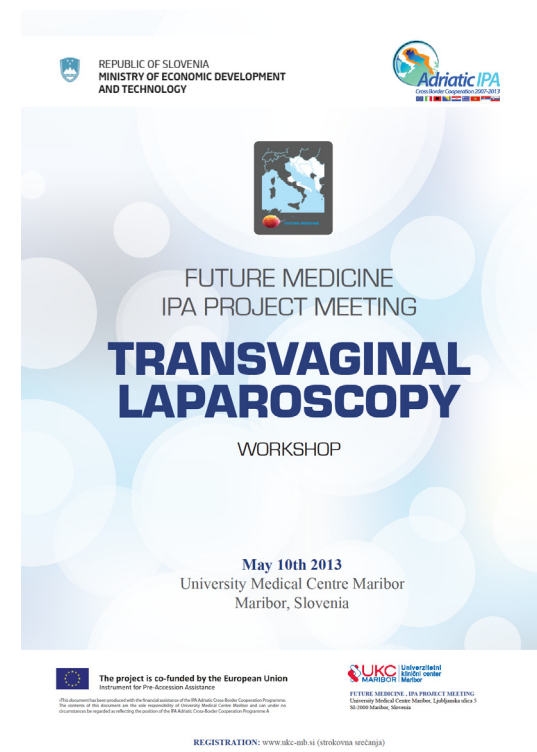
Organizacija mednarodnih simpozijev in učne delavnice 2009 - 2014

V obdobju izvajanja raziskovalnega programa smo organizirali 3 simpozije Evropskega združenja za humano reprodukcijo in embriologijo v Mariboru z naslovi:

1. Patient friendly IVF (2009)
2. Excellence in IVF (2010)
3. Ultrasound in reproductive medicine (2013)



Organizacija učne delavnice evropskega projekta
Jadransko čezmejno sodelovanje IPA - Adriatic
Cross Border Cooperation Programme:
naslov projekta: FUTURE MEDICINE





Priloga 2

Veda: MEDICINA

Področje: 3.05 REPRODUKCIJA ČLOVEKA

Raziskovalni program: P3-0327 Reprodukcijska človeka – eksperimentalni in laboratorijski vidiki

Vodja programa: izr. prof. dr. Borut Kovačič

Izjemno zanimanje za poglavje: Borut Kovačič and Veljko Vlaisavljević [Importance of Blastocyst Morphology in Selection for Transfer](#). In: Wu B. (ed.) **Advances in Embryo Transfer** ISBN 978-953-51-0318-9, 248 pages, Publisher: InTech, Published: March 14, 2012.

Obvestilo založnika:

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V poglavju je opisan izvirni sistem ocenjevanja človeških blastocist iz postopka IVF in Blastocist po odmrzovanju. Izračunana je tudi implantacijska sposobnost posameznih morfoloških tipov blastocist, kar zelo pomaga pri izboru zarodkov za prenos v maternico oziroma pri ocenjevanju primernosti zarodkov za zamrzovanje.