

Molecular Markers in Reproduction

Natalia Battista

Molecular Markers in Reproduction

■ **Biomarkers in human reproduction**

- Signal molecules in reproduction
- Endocannabinoids as novel therapeutic targets in fertility
- Biomarkers of ovarian response
- Signalling pathway in reproduction

■ **Methodologies for biomarkers identification in reproduction**

- Experimental techniques for the identification and quantification of specific molecular markers of reproduction in cellular models:

Biomarkers in human reproduction

- **Signal molecules in reproduction**

- Molecular Marker: definition and evaluation criteria
- Clinical development of a marker
- Signal molecules involved in reproduction
- Molecular markers of female and male reproductive function

- **Endocannabinoids: bioactive lipids as markers of infertility**

- Metabolic pathways and mechanisms of intra- and inter-cellular transport
- Molecular targets: cannabinoid and non-cannabinoid receptors, receptor antagonists
- Biological activity on the immune system
- Biological activity on the reproductive system

Biomarkers in human reproduction

▪ **Signalling pathway in reproduction**

- Cell signalling: cell-cell communication and cell-environment communication: types of signals
- Cell surface and intracellular receptors
- Signal transduction and second messengers
- G-protein-coupled receptors. Receptor tyrosine kinase
- Role of protein kinases and phosphatases in the cellular response

Biomarkers in human reproduction

- **Biomarkers of ovarian response**
- **MEDLINE on the potential molecular markers to be used in the field of animal and human reproduction**

Methodologies for biomarkers identification in reproduction

- **Experimental techniques for the identification and quantification of specific molecular markers of reproduction in cellular models**
 - MTT assay
 - Enzyme-linked immunosorbent assay (ELISA)

Week 14-18 March

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9.00-10.00				Laboratory	(Rapino)
10.00-11.00		(Battista)	(Battista)	(Rapino)	(Rapino)
11.00-12.00		(Battista)	(Battista)	Motti	(Battista)
12.00-13.00		(Battista)	(Battista)		(Battista)
14.00-15.00				Laboratory 4 ^o level (Rapino)	
15.00-16.00					
16.00-17.00					
17.00-18.00					

Week 21-25 March

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9.00-10.00		(Battista)		Laboratory	(Rapino)
10.00-11.00		(Battista)	Bioinfo Lab	(Rapino)	(Rapino)
11.00-12.00		(Battista)	(Battista)	Motti	(Battista)
12.00-13.00		(Battista)			(Battista)
14.00-15.00			Laboratory (Rapino) Motti	Laboratory 4 ^o level (Rapino)	
15.00-16.00					
16.00-17.00					
17.00-18.00					

Week
28 March –
1 April

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9.00-10.00				Laboratory	(Rapino)
10.00-11.00		(Battista)	(Battista)	(Rapino)	(Rapino)
11.00-12.00		(Battista)	(Battista)	Motti	(Battista)
12.00-13.00		(Battista)	(Battista)		(Battista)
14.00-15.00		Laboratory 4 ^o level (Rapino)	MTT (Battista) Motti	Laboratory 4 ^o level (Rapino)	
15.00-16.00					
16.00-17.00					
17.00-18.00					

Week
4 – 8 April

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9.00-10.00		Laboratory	ELISA		Peer-review activity
10.00-11.00		(Rapino)	(Battista)		(Battista - Rapino)
11.00-12.00		Motti	Motti		
12.00-13.00					
14.00-15.00		Seminar	Seminar		
15.00-16.00					
16.00-17.00					
17.00-18.00					

First scheduled exam: April 13^{trd}, 2022