

Activities and responsibilities of each partner (working plan):**Phase list**

Phase no.	Phase title	Involved partners	Start month (1 ... n-1)	End month (2 ... n)
1	Checking of the theoretical hypothesis for the elaboration of the experimental model and beginning of the researches for the obtaining of primary extracts	ICECHIM UPB UBPROTMED PLANTAVOREL	1	8
2	Researches for the elaboration of the obtaining technology for hypericin concentrates starting from St. John's Wort	ICECHIM UPB UBPROTMED PLANTAVOREL	7	18
3	Realization of the laboratory technology for the obtaining of the hypericin concentrates from St. John's Wort	ICECHIM UPB UBPROTMED PLANTAVOREL	19	27
4	Demonstration of functionality and utility of the obtaining technology for hypericin concentrates with high bioactivity	ICECHIM UPB UBPROTMED PLANTAVOREL	28	34

Phase description

Phase no.	1					
Phase title	Checking of the theoretical hypothesis for the elaboration of the experimental model and beginning of the researches for the obtaining of primary extracts					
Involved partners	CO-P1	P2	P3	P4	P5	Total
Person-months	16	7	7	12	-	42
Start month	month 1					
End month	month 6					

Objectives						
Verification of the literature approaches used for imprinting other similar bioactive compounds; synthesis of copolymers with different co monomers and testing their capacity for molecular imprinting with the most bioactive hypericin enantiomer; preliminary studies about appropriate solvents for primary extraction of hypericin from St. John's Wort and for further concentration of the extracts by MISPE; extracts characterization.						
Description of work (possibly broken down into tasks) and role of participants						
Task 1.1 Verification of the theoretical hypothesis about appropriate copolymers for the hypericin imprinting.						
1.1.1. Studies about the synthesis of various copolymers appropriate for the molecular imprinting with hypericin- <u>ICECHIM</u>						
1.1.2. Physical-chemical characterization of the synthesized copolymers- <u>UPB</u>						
1.1.3. Studies concerning the appropriate solvents for primary extraction of hypericin from St. John's Wort- <u>PLANTAVOREL</u>						
1.1.4. Compositional characterization of the primary hypericin extracts- <u>UB PROTMED</u>						
Task 1.2. Beginning of the researches concerning the the obtaining of hypericin extracts						
1.2.1. Tests on the molecular imprinting with hypericin- <u>ICECHIM</u>						
1.2.2. Beginning of the researches on the obtaining of hypericin primary extracts <u>PLANTAVOREL</u> .						
Phase no.	2					
Phase title	Preliminary researches and researches for the elaboration of the obtaining technology for hypericin concentrates starting from St. John's Wort					
Involved partners	CO-P1	P2	P3	P4	P5	Total
Person-months	66	29	30	49	-	174
Start month	7					
End month	18					
Objectives						
Molecular imprinting of hypericin onto various synthesized copolymers; characterization of the imprinted and non imprinted polymer materials; use of new prepared MIPs for hypericin separation from primary extracts obtained from St. John's Wort; analyses of hypericin primary extracts and concentrates.						
Description of work (possibly broken down into tasks) and role of participants						
Task 2.1. Studies and preliminary researches for the selective separation of the hypericin from St. John's Wort extracts						
2.1.1. Studies and preliminary researches for the obtaining of polymer materials, molecularly imprinted with hypericin- <u>ICECHIM</u>						
2.1.2. Analysis of the polymer materials- <u>UPB</u>						
2.1.3. Physical-chemical Analysis on the Hypericine concentrates- <u>UBPROTMED</u>						
Task 2.2. Studies and preliminary researches for the selective separation of the hypericin from St. John's Wort						
2.2.1. Testing of imprinted polymer materials for obtaining hypericin concentrates- <u>PLANTAVOREL</u> .						
Task 2.3. Researches for the synthesis of the copolymers and of the polymer						

materials molecularly imprinted with hypericin

2.3.1. Research of the technological parameters for the obtaining of copolymers and polymer materials (granules, pearls or membranes) imprinted with hypericin- ICECHIM

2.3.2. Complex physical- chemical and structural characterization of copolymers and polymer materials and morphological characterization of supramolecular structures- UPB

Task 2.4. Researches for the elaboration of the technology for selective separation of hypericin from primary extracts of St. John's Wort

2.4.1. Researches on the selective separation using imprinted polymer materials supplied by the coordinator- PLANTAVOREL

Task 2.5. Specific analysis for the assessment of the separation selectivity

2.5.1. Analysis concerning the selectivity of the separation on the molecularly imprinted polymers- UB PROT MED

Phase no.	3					
Phase title	Realization of the laboratory technology for the obtaining of the hypericin concentrates from St. John's Wort					
Involved partners	CO-P1	P2	P3	P4	P5	Total
Person-months	53	23	24	52	-	152
Start month	19					
End month	27					
Objectives						
Realization of the technology for the obtaining of polymer materials molecularly imprinted with hypericin; assessment of the characteristics of the new supramolecular structures; realization of the technology for the solid phase extraction and elution of hypericin; complex characterization of hypericin concentrates						
Description of work (possibly broken down into tasks) and role of participants						
Task 3.1. Realization of the laboratory technology for obtaining of the polymer materials molecularly imprinted with hypericin						
3.1.1. Realization of the laboratory technology for the producing of hypericin imprinted polymers- <u>ICECHIM</u>						
3.1.2. Physical- chemical, physical- mechanical and structural characterization of the obtained molecularly imprinted polymers – <u>UPB</u>						
Task 3.2. Realization of the laboratory technology for the obtaining of the hypericin concentrates from St. John's Wort						
3.2.1. Realization of the technology for the solid phase extraction for the obtaining of hypericin concentrates- <u>PLANTAVOREL</u>						
Task 3.3. Complex characterization of the hypericin concentrates						
3.3.1. Complex characterization of the extracts- <u>UB PROT MED</u>						
Phase no.	4					
Phase title	Demonstration of functionality and utility of the obtaining technology for hypericin concentrates with high bioactivity					
Involved partners	CO-P1	P2	P3	P4	P5	Total
Person-	60	27	27	59	-	173

months						
Start month	28					
End month	34					
Objectives						
Demonstration of the reproducibility of the laboratory technology for MIPs, and improving it by enantiomeric imprinting; assessment of the characteristics of the polymeric materials obtained by the improved technology; demonstration of the solid phase separation and realization of chiral separation of the most bioactive hypericin enantiomer; demonstration of the selectivity of the obtained materials and high bioactive hypericin concentrates characterization						
Description of work (possibly broken down into tasks) and role of participants						
Task 4.1. Demonstration of the reproducibility and utility of the technology for producing molecularly imprinted polymer materials for selective separation of hypericin.						
4.1.1. Researches for the demonstration of the reproducibility of the technology for the obtaining of the new polymer materials by enantiomeric imprinting and for its optimization.- <u>ICECHIM</u>						
4.1.2. Characterization of the new polymer materials for technology demonstration- <u>UPB</u>						
Task 4.2. Demonstration of the functionality and utility of the technology for the hypericin concentrates obtaining						
4.2.1. Researches for the demonstration of the reproducibility of the new technology for the separation of hypericin from St. John's Wort and for the optimization by chelatic separation- <u>PLANTAVOREL</u>						
Task 4.3. Demonstration of the selectivity of the hypericin separation on the molecularly imprinted polymers obtained in the project						
4.3.1. Analysis for proving the selectivity of the separation process performed on the new molecularly imprinted polymers- <u>UB PROTMED</u>						
Task 4.4. Dissemination at great scale by communicating and national and international publishing of the results (during project running): 4 published ISI articles, 6 scientific communications, participation in an exhibition, web page and CD-rom						
4.4.1. Coordination of the dissemination activity- <u>ICECHIM</u>						
4.4.2. Participation in dissemination activity- <u>UPB</u>						
4.4.3. Participation in dissemination activity- <u>UB PROTMED</u>						
Task 4.5. Support for the dissemination activity						
4.5.1. Support and participation in the dissemination and- <u>PLANTAVOREL</u>						
Task 4.6. Identification of the intellectual property rights and applying for at least 2 patent askings						
4.6.1. Coordination of the patent asking activity- <u>ICECHIM</u>						
4.6.2. Participation in patent asking- <u>UPB</u>						
4.6.3. Participation in patent asking- <u>UB PROTMED</u>						
Task 4.7. Participation and support in patent asking						
4.7.1. Participation and support for patent asking- <u>PLANTAVOREL</u>						