Extracorporeal chemotherapy in Spain: current status and future directions

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Apheresis activity in Spain: A survey of the Spanish Apheresis Group

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Therapeutic Apheresis

Comunidad	Recibidas	Realizan
Andalucía	3	3
Aragón	2	2
Asturias	3	1
Baleares	1	1
Canarias	4	4
Cantabria	2	2
Castilla La Mancha	1	1
Castilla y León	3	3
Cataluña	5	5
Comunidad Valenciana	1	1
Extremadura	2	
Galicia	2	2
La Rioja	1	1
Madrid	10	7
Murcia	2	2
Navarra	3	2
País Vasco	3	2
Total	48	39

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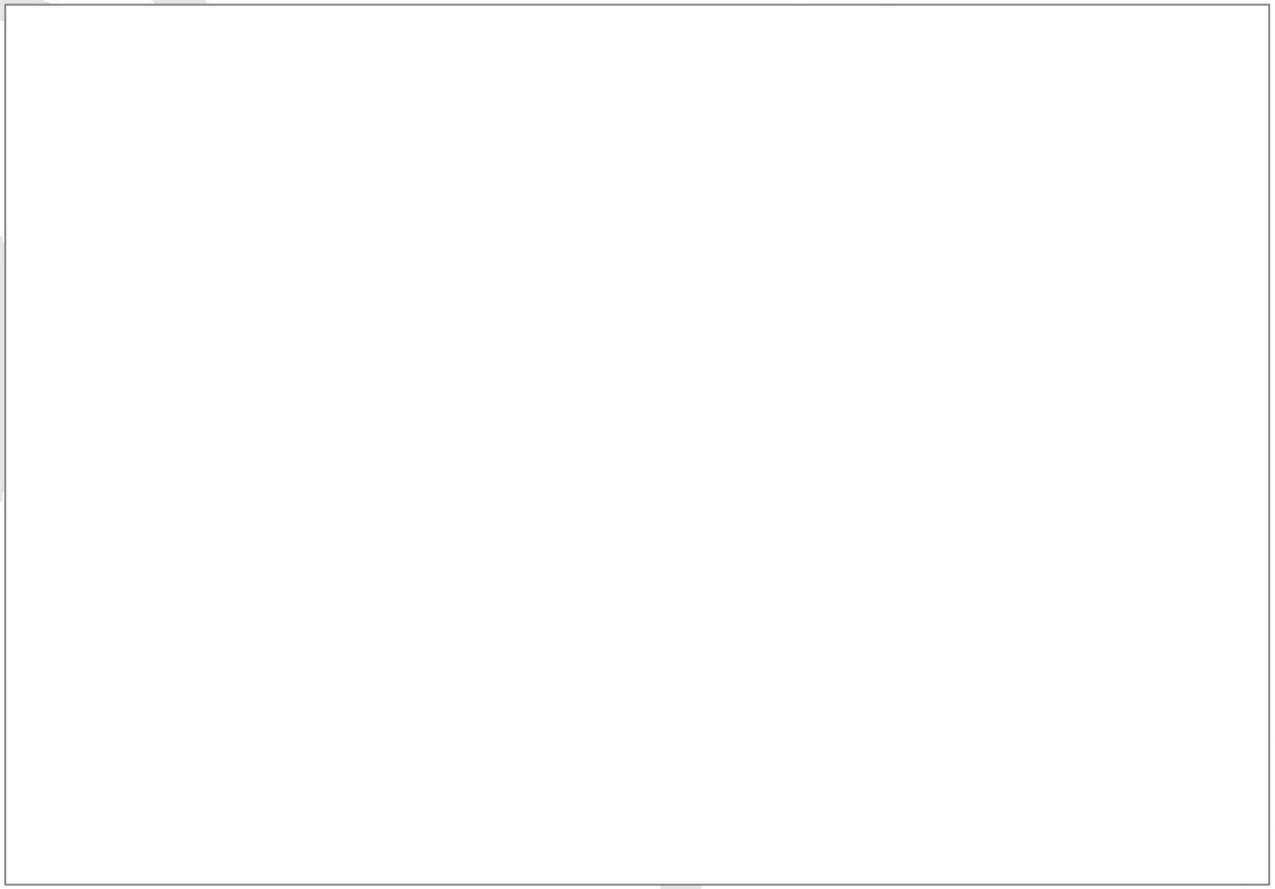
Table 1
Therapeutic apheresis procedures in adult patients.

Procedure	Median	Range	Total *n* (%)
Plasma exchange	24	0–349	2118 (34%)
Stem cell collection	30	0–156	1931 (30%)
Erythrocytapheresis	0	0–173	865 (13%)
Extracorporeal photoapheresis	0	0–229	734 (11%)
LDL apheresis	0	0–186	306 (5%)
Granulocytes	0	0–130	256 (4%)
Immunoadsorption	0	0–65	140 (2%)
RBC exchange	0	0–22	30 (0.5%)
Leukapheresis	0	0–5	23 (0.4%)
Platelet apheresis	0	0–4	6 (0.1%)
Total			6373 (100%)

Table 2
Therapeutic apheresis procedures in children patients.

Procedure	Median	Range	Total *n* (%)
Extracorporeal photoapheresis	0	0–185	320 (42%)
Plasma exchange	0	0–81	212 (27%)
Stem cell collection	0	0–26	102 (13%)
LDL apheresis	0	0–52	78 (10%)
Granulocyte apheresis	0	0–45	45 (6%)
Immunoadsorption	0	0–7	7 (1%)
Reoapheresis	0	0–8	8 (1%)
Total			772 (100%)

Apheresis platforms in centers performing therapeutic apheresis



Apheresis Unit

	2011	2012	2013	2014 Through Nov
Allogeneic HPC collections	18	23	27	23
Autologous HPC collections	95	95	87	62
Plasma exchange	349	392	383	390
RBC exchange	2	1	10	12
MNC collections	12	21	15	2
Therapeutic plateletpheresis	0	1	1	10
LDL apheresis	8	47	65	80
Extracorporeal photochemotherapy	0	19	37	50

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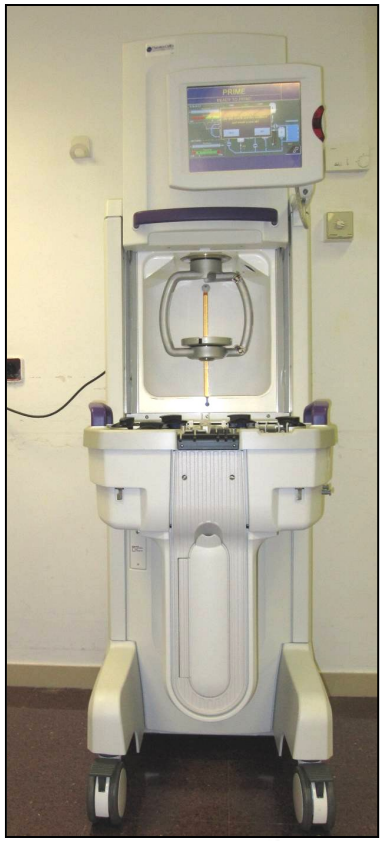
On-line ECP

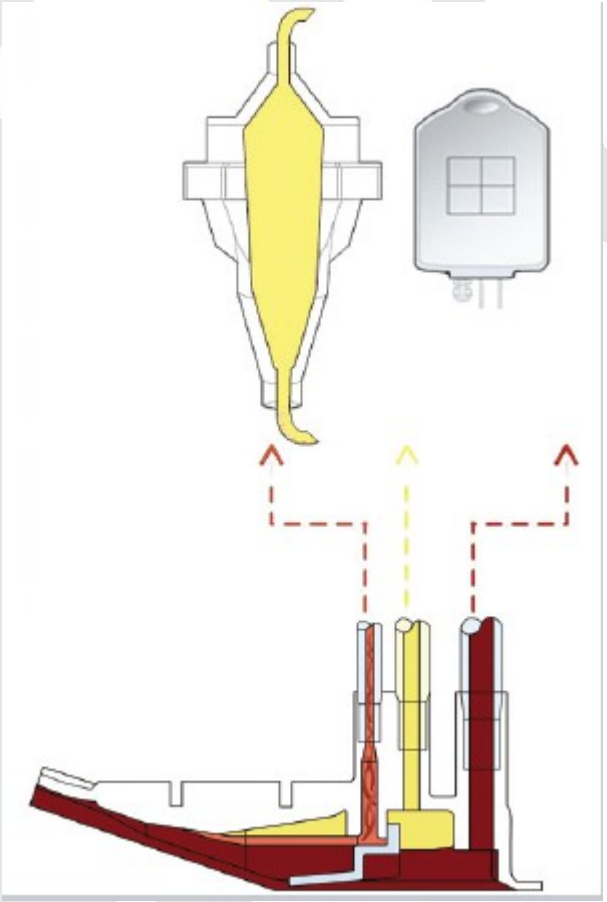
- Therakos UVAR® XTS

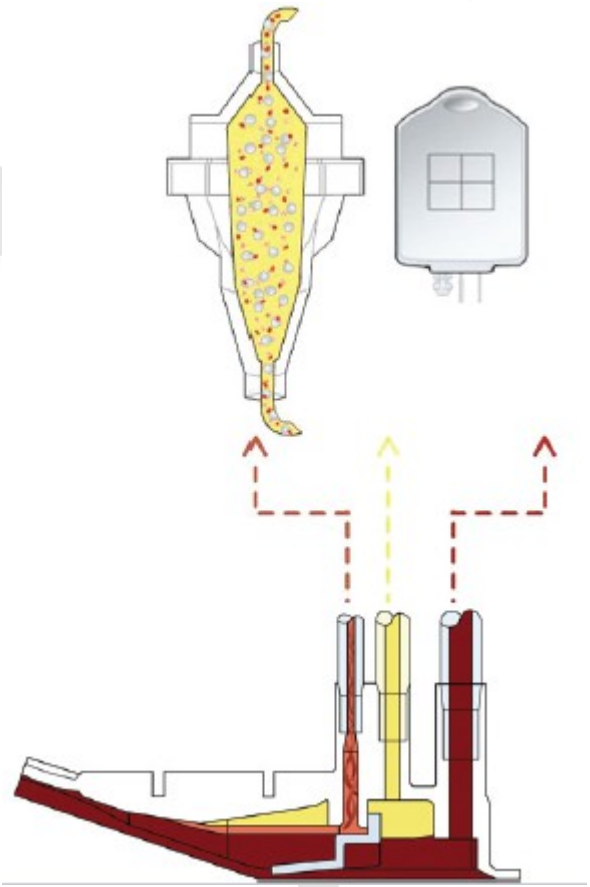


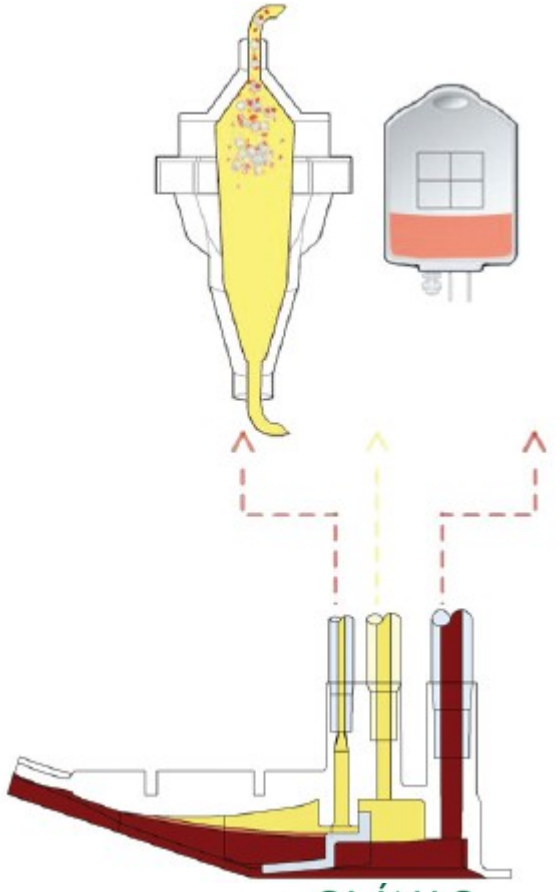
- Therakos CELLEX®

Off-line ECP: collection

MNC Collection v. 5.0







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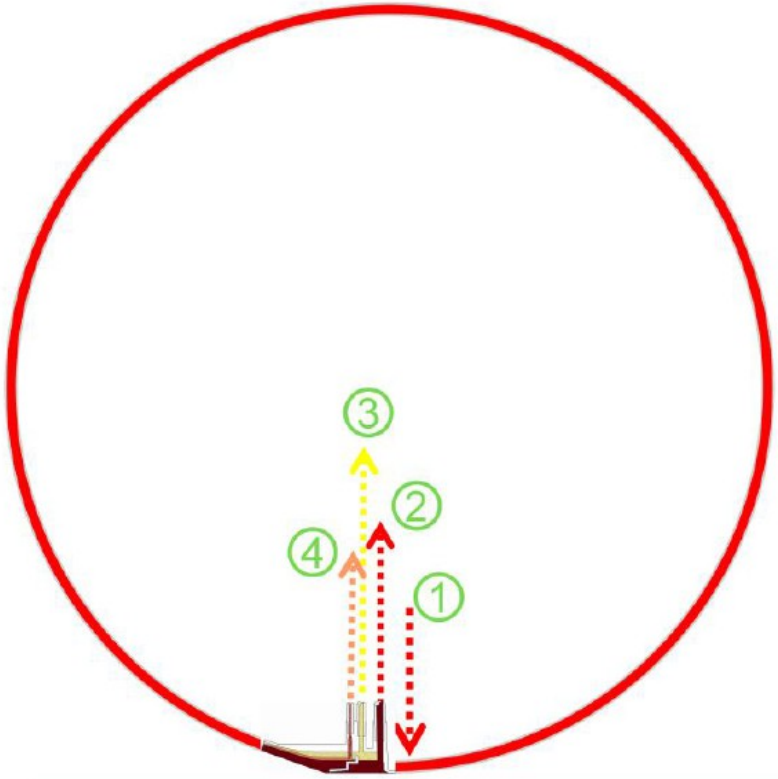
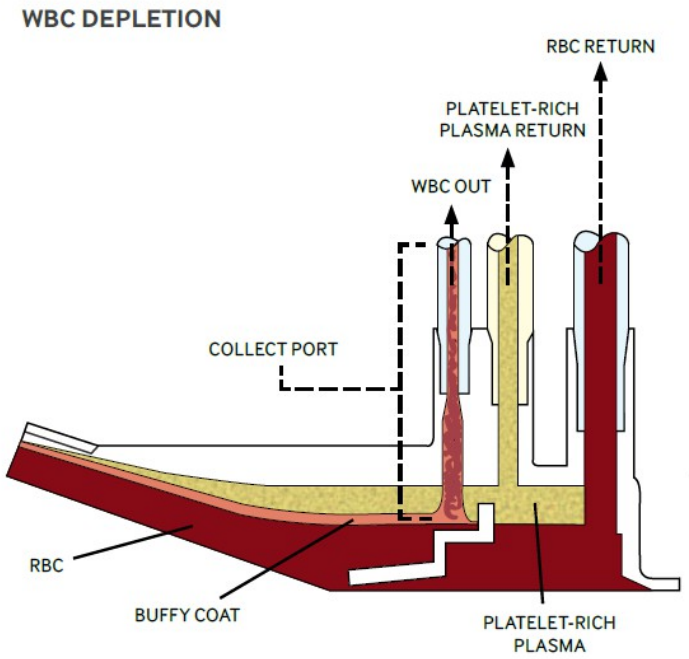
Continuous MNC collection





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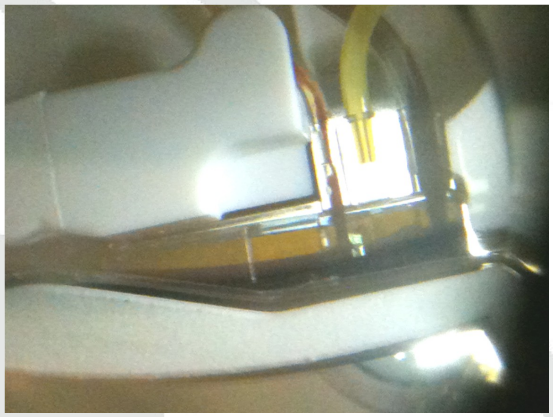
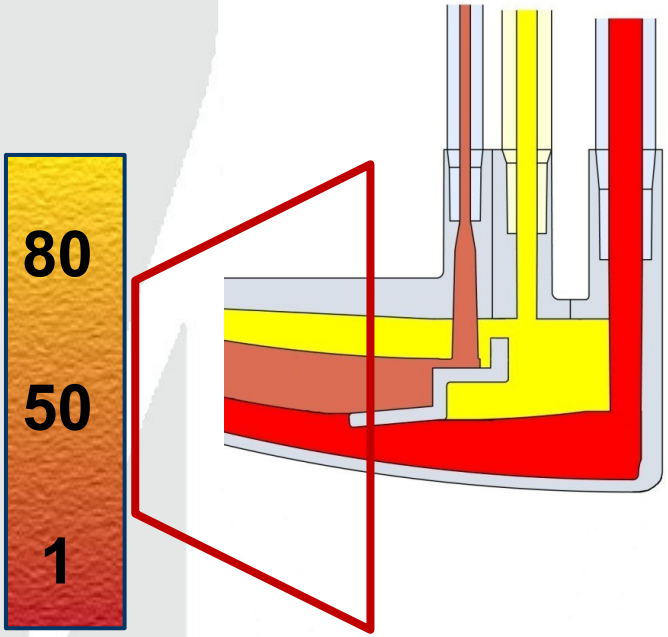
With the AIM assistance





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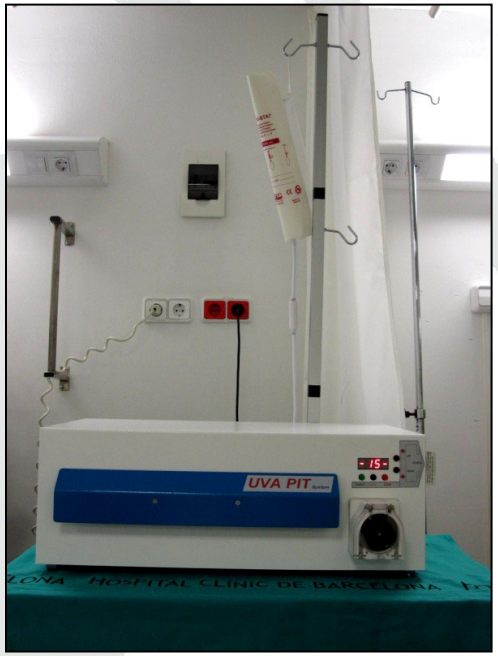
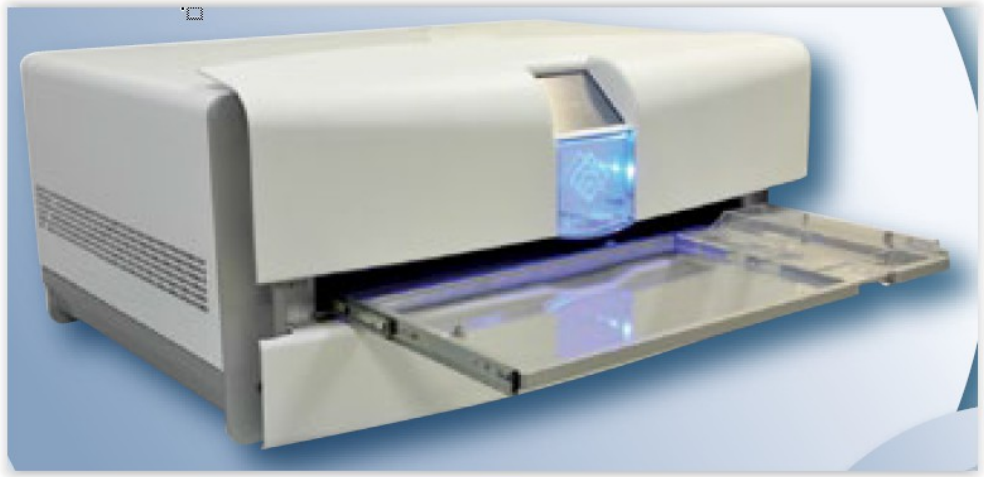
ECP: illumination UVA



UVA-PIT
Med Tech Solutions



Macogenic
Maco-Pharma

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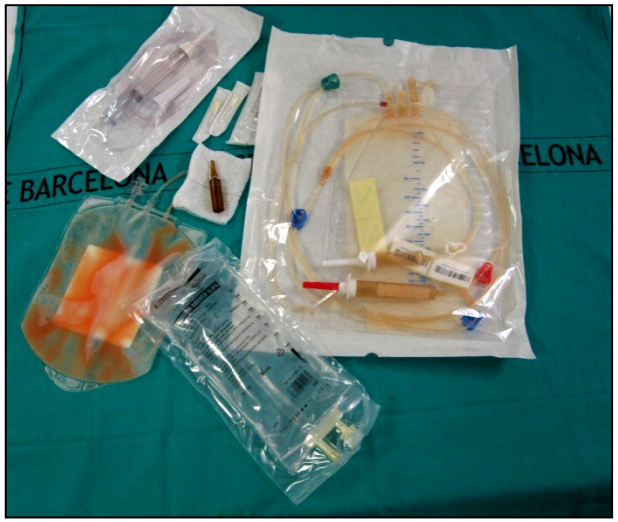
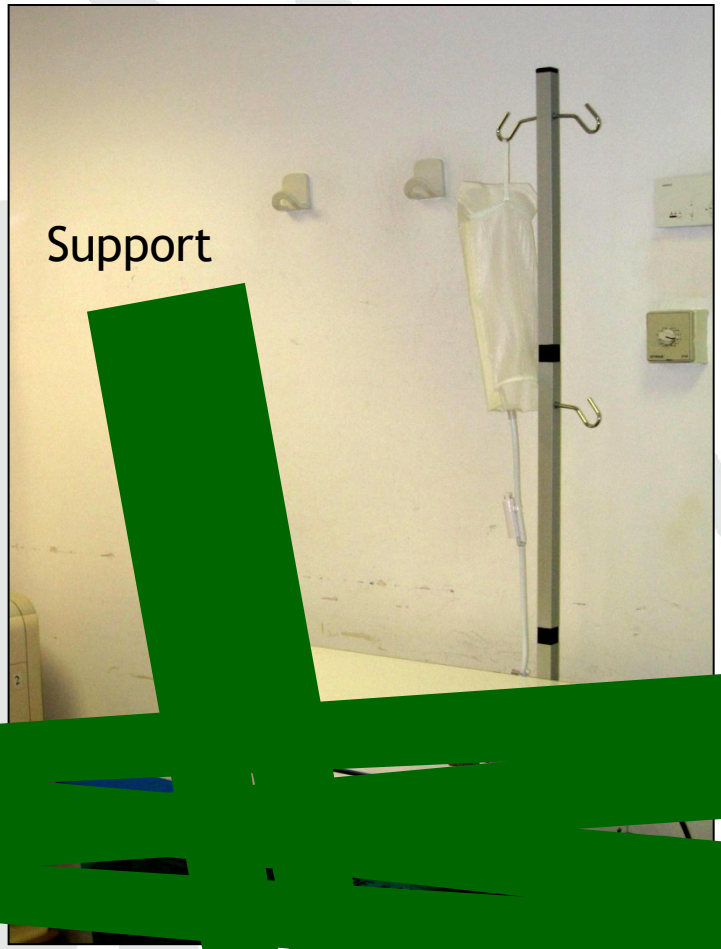
UVA PIT System





Support

Keyboard

Peristaltic pump

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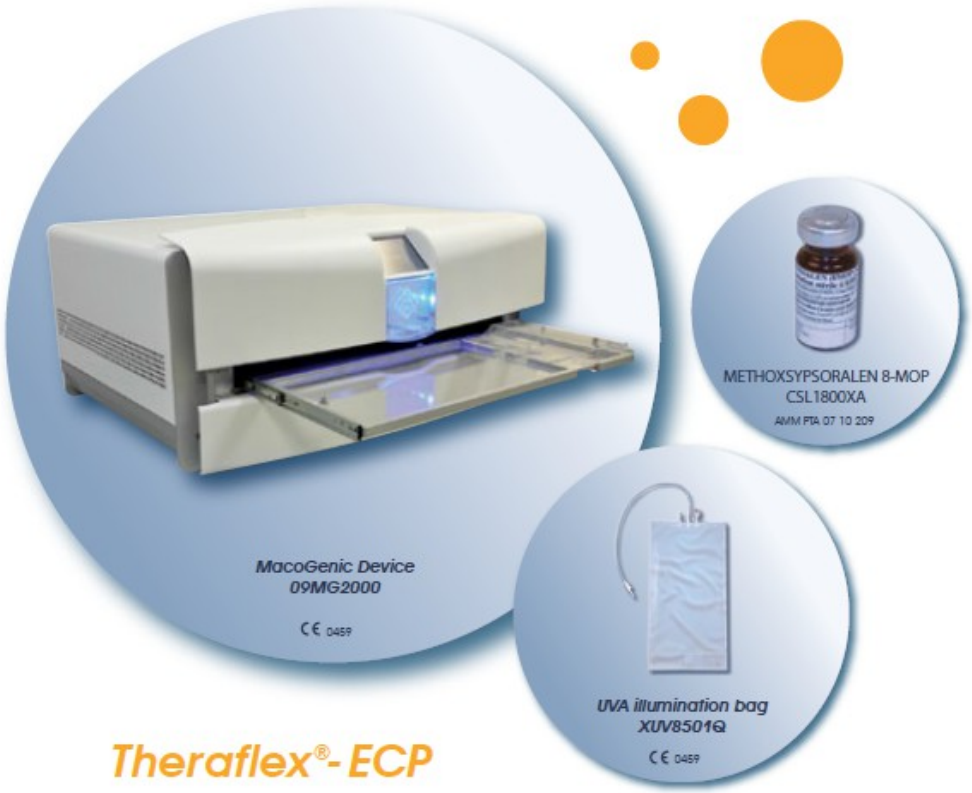
Macogenic


MacoGenic Device
09MG2000
CE 0459
METHOXSYPSORALEN 8-MOP
CSL1800XA
AMM FTA 07 10 209
UVA illumination bag
XUV8501Q
CE 0459
Theraflex®- ECP

Treatment Scheme

	On line	Off Line
Volume of blood processed	1,5 liters	1 or 2 Total Blood Volumes
Frequency of treatment	2 times a week	1 time a week

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Successful use of miniphotopheresis for the treatment of graft-versus-host disease

Holger Hackstein,[1] Jose Jaime Verdu Amoros,[2] Gregor Bein,[1] and Wilhelm Woessmann[2]

BACKGROUND: Extracorporeal photopheresis (ECP) is an important cell-based therapy for graft-versus-host disease (GVHD); however, the blood volume required per treatment to achieve a clinical response is unknown.

STUDY DESIGN AND METHODS: We developed a mini-ECP technique (mini-ECP) using only 100 to 200 mL of whole blood for patients with contraindications for apheresis or low body weight. Sixteen patients (n = 13 acute, n = 3 chronic GVHD) with a median body weight of 19 kg (range, 7-48 kg) received 460 mini-ECP treatments with a median duration of 115 days (range, 49-973 days).

RESULTS: Mini-ECP was well tolerated, and acute GVHD resolved completely in nine of 13 patients and partially in two patients but not in two patients. Cutaneous chronic GVHD exhibited a mixed response (one complete, one partial, and one no response).

CONCLUSION: These results indicate mini-ECP as a novel and less invasive therapy for patients with GVHD and contraindications for apheresis.

TRANSFUSION 2014;54:2022-2027.

Schedule for Off line ECP for chronic GVHD

- Once a week for 4 weeks
- Once every other week for 3 months
- Evaluation after 10 sessions:
  - If progression: stop
  - If stabilization or improvement for 3 to 6 months

ASFA Guidelines

Disease	Disease condition	Category	Grade
Graft-versus-host-disease	Skin (chronic)	II	1B
	Skin (acute)	II	1C
	Non-skin (acute/chronic)	III	2B
Cardiac transplantation	Rejection prophylaxis	II	2A
	Cellular or recurrent rejection	II	1B
Lung allograft rejection	Bronchiolitis obliterans syndrome	II	1C
Cutaneous T-cell lymphoma; mycosis fungoides; Sezary syndrome	Erythrodermic	I	1B
	Non-erythrodermic	III	2C

Schwartz J, *et al*. J Clin Apher 2013; 28: 145-284

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ASFA Guidelines

Disease	Disease condition	Category	Grade
Pemphigus vulgaris	Severe	III	2C
Psoriasis		III	2B
Scleroderma (Progressive systemic sclerosis)		III	2B
Inflammatory bowel disease	Crohn's disease	III	2C
Nephrogenic sytemic fibrosis		III	2C

Schwartz J, *et al*. J Clin Apher 2013; 28: 145-284

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Conclusions

- In Spain, ECP is increasingly used in the treatment of acute and chronic GVHD
- The off-line procedure is the most used
- The scheme of treatment is not yet fully established
- ECP is also increasingly used in other indications

Thank your very much for your attention

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