

DPMAS Related FAQ

1. Why do we need bilirubin adsorption?

High bilirubin levels could lead to mitochondrial dysfunction and capillary leak syndrome; cholemic nephrosis is also associated with elevated bilirubin in ACLF. Bile acid could lead to hepatotoxicity and nephrotoxicity. Systemic inflammation and bile acids are critical drivers for liver failure in ACLF. High ammonia is supposed to be associated with brain swelling. DPMAS is not only to adsorb the bilirubin but also to adsorb bile acid, ammonia, and cytokines; this may benefit on:

- Decrease bilirubin, bile acid, cytokines, and ammonia^[1-5].
- Alleviate liver injury^[1-6].
- Reduce hepatic encephalopathy grading^[6].
- Increase liver transplant waiting time^[2,3].

2. What are the treatment modes for liver cartridges?

Jafron hemoadsorption therapy for the liver disease could be performed in different modes:

- HA330-II: Direct blood adsorption as HP, HP+HD or HD+CRRT mode.
- BS3330: Plasma adsorption (PA) mode (Plasma separator + BS330 cartridge).
- DPMAS: Plasma adsorption (PA) mode (Plasma separator+BS330 cartridge+HA330-II cartridge).

3. When do we use HA330-II, BS330 and DPMAS?

HA330-II	BS330	DPMAS
Hyper-inflammation + Hyperbilirubinemia	Hyperbilirubinemia + Hyper-bileacidemia	Hyperbilirubinemia + Hyper-inflammation
Total Bilirubin< 13mg/dl; High PCT, CRP, or IL-6	Total Bilirubin> 222.4 umol/L (13mg/dl).	Total Bilirubin≥ 13mg/dl; High PCT,CRP, or IL-6

4. Why do we need a plasma separator when using BS330?

The direct contact of blood to BS330 resin may cause severe adverse reactions; the reasons are:

- The BS330 resins are anion exchange resins; direct exposure to the blood may cause coagulation.
- BS330 cartridge has finer resins than HA cartridges; whole blood adsorption may lead to cartridge blockage.
- Filtration fabric at the outlet end of the BS330 column may result in clotting if direct blood adsorption.

5. Why sometimes there are white or translucent jelly-like substances appear on BS330 during the process of plasma adsorption?

- It is a sign of coagulation problem resulting from inadequate anticoagulation. There is no blood cell, so it will not form a clot. The visible white or translucent jelly-like material is activated fibrinogen and precipitation phenomena.
- Mostly, it is caused by insufficient anticoagulation, or the patient is in a hypercoagulable state. Arterial pressure, venous pressure, and TMP should be monitored carefully during the treatment. The adjustment of anticoagulant should be considered.

6. When combining PE+DPMAS, which treatment should start first?

- PTA<30%, recommend conducting PE then DPMAS.
- PTA>30%, could start from either PE or DPMAS.
- PE is recommended to be admitted first for patients with PTA<30%, because it could supply the patients with the coagulation factors and improve the coagulation function.

[1] Molecular absorption system in patient with decompensated liver failure." nephrology. Vol. 25. 111 river st, hoboken 07030-5774, nj usa:1] Yao, Jia, et al. "Therapeutic effect of double plasma molecular adsorption system and sequential half - dose plasma exchange in patients with HBV - related acute - on - chronic liver failure." Journal of clinical apheresis 34.4 (2019): 392-398.

[2] Li, Peng, et al. "A non-bioartificial liver support system combined with transplantation in HBV-related acute-on-chronic liver failure." Scientific reports 11.1 (2021): 1-9.

[3] Wan, Yue - Meng, et al. "Therapeutic plasma exchange versus double plasma molecular absorption system in hepatitis B virus - infected acute - on - chronic liver failure treated by entercavir: A prospective study." Journal of clinical apheresis 32.6 (2017): 453-461.

[4] Guo, Xiju, et al. "Comparison of plasma exchange, double plasma molecular adsorption system, and their combination in treating acute-on-chronic liver failure." Journal of International Medical Research 48.6 (2020): 0300060520932053.

[5] Sharma, Dhruva, et al. "Hepatitis A virus-induced severe hemolysis complicated by severe glucose-6-phosphate dehydrogenase deficiency." Indian journal of critical care medicine: peer-reviewed, official publication of Indian Society of Critical Care Medicine 22.9 (2018): 670.

[6] Sirivongrangsorn, Phatadon, et al. "immunomodulatory effect of double plasma wiley, 2020.

Contraindications, warnings and precautions of the products, please refer to Instruction For Use.