# PVC BIO-FUNCTIONALIZED

A team at University of Chile has developed Bio-functionalized PVC, a technology increasing PVC flexibility and hemocompatibility, reducing the use of plasticizers in medical devices.

## DESCRIPTION

At a global level, there is a demand for medical devices made of polyvinyl chloride (PVC) free of plasticizers, such as di(2-ethylhexyl) phthalate or DEHP, to avoid plasticizers migration towards biological fluids. Several countries worldwide have governmental regulations which promote this kind of plasticizer-free PVC products.

## SOLUTION

Bio-functionalized PVC is a new method for modifying PVC through biomolecules (amino acids). The objective is increasing the hydrophilic character of PVC to increase its flexibility and blood compatibility (hemocompatibility). Besides, it reduces the use of plasticizers like DEHP in medical devices, such as blood storage bags, thus preventing plasticizers from migrating towards biological fluids. In this way, Bio-functionalized PVC becomes a more innocuous material than the existing ones nowadays.

## TECHNOLOGY

Bio-functionalized PVC is in a state of development equivalent to TRL4. It is been tested at a laboratory level and has been modified with two amino acids having different molecular weights (Glycine y ß-alanine), measuring parameters like functionalization, flexibility and hemocompatibility levels. Also, medical devices have been developed – blood storage bags, hoses, tubes and intravenous catheters – measuring their platelet adhesion.


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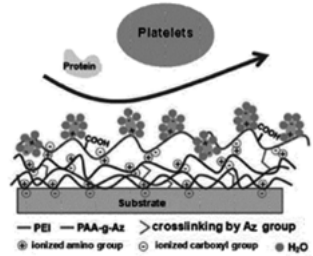


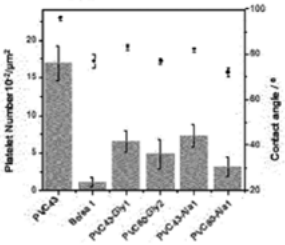


## MARKET OPORTUNITY

Market size: USD 1,08 thousand million (2018).
CAGR: 8,8%.
Segment: Bio-plasticizers for medical usage.
Expected Market Size: USD 2,11 thousand million (2026).

## PROTECTION

Patent Application in Chile (CL201602771)

Europe (EP3536715) and in USA (US20200062872)

## COMPETITIVE ADVANTAGE

- 44% reduction in the use of chemical plasticizers, like DEHP, in PVC-based medical devices.
- Increased hemocompatibility of PVC-based medical devices.
- Greater safety, as it would prevent plasticizers from migrating towards biological fluids.

## BUSINESS MODEL

Technology licensing to companies with production capacity, commercialization and distribution of the technology, for instance from plasticizers and/or PVC manufacturers' profile.

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## TEAM

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