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## Scientific design, realization and clinical use in regenerative medicine of a human derived dermal matrix (HDM)

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The continuous scientific innovation in the field of skin tissue regenerative medicine has led in the last years to the development of several acellular matrices through the application of different methods of decellularization for their transplantation use. Here, we described the scientific design, realization and clinical use of a human matrix derived from dermal tissue (HDM) produced at Emilia Romagna Regional (ERR) Skin Bank using a patented decellularization method, able to remove cellular component from dermis maintaining unaltered its structural integrity. The decellularized dermis thus obtained is a biological product of tissue engineering widely distributed as a permanent dressing by ERR Skin Bank for several clinical applications in different fields of regenerative medicine in which it was required. In particular, HDM is actually distributed for the treatment of several clinical conditions such as abdominal wall defects, breast and pelvic reconstruction as well as rotator cuff repair, burns and non-healing wounds. The clinical results obtained in these different fields support the clinical use of HDM as a permanent dermal replacement for the treatment of different clinical conditions for its ability to regenerate the wound area avoiding problems deriving from rejection on the receiving patients.

## **Biography**

Elena Bondioli has her expertise in Tissue Engineering and Regenerative Medicine. In particular, she has developed the method of decellularization used today on human dermis to obtain the acellular, biological cell-free scaffold (HDM) here described. She developed this method after years of experiences in research, clinical treatment of wounds/burns and processing of human skin tissue for transplants at the Skin Bank of Emilia Romagna Region. The method of decellularization applied on human dermis is able to maintain a balance between the removal of cellular component and the maintenance of structural integrity of the tissue. To date, the biological cell-free scaffold developed is widely used for different clinical applications in several fields of Regenerative Medicine.

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