

# NOVEL BIOADHESIVE FOR WOUND CLOSURE IN ANIMALS OR HUMANS



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## ABSTRACT

**The Adhesion and Adhesives** Laboratory research group has developed a new biomaterial for use as adhesive or tissue sealant applicable to both animals and humans. This invention solves the disadvantages of the adhesives known so far presenting optimal properties such as biocompatibility with living tissues, high adhesive capacity, adaptable to the tissue of the wound being bond, absence of toxicity and tissue regeneration properties.

The group is looking for companies interested in acquiring this technology for commercial exploitation.

## ADVANTAGES AND INNOVATIVE ASPECTS

The formation of adhesive materials by cyanoacrylate polymerization to form a solid layer is known in the state of the art, but, in the present invention, the inclusion of bifunctional dendrons to cyanoacrylate-based adhesives presents important advantages:

- Increased polymerization rate in contact with a biological environment.
- Reduction of the exothermic reaction during the polymerization process of cyanoacrylates in the presence of water or blood, avoiding risks of tissue death (e.g. necrosis).
- Improvement of the reactivity of the cyanoacrylate monomers by eliminating secondary toxic compounds from their polymerisation that do not normally react with them.
- Increase in the flexibility of the polymerised adhesives, which avoids their premature detachment as time passes since their application.
- It allows aesthetic improvements (i.e. absence of scars) due to better tissue integration and re-sorption of the polymerized adhesive.
- It does not generate toxic by-products.

## INNOVATIVE ASPECTS OF TECHNOLOGY

The polymeric biomaterial of the present invention presents rapid curing and cross-linking, moderate heat release during curing within the range that allows its compatibility with living tissues, high adhesive capacity, good flexibility adaptable to the tissue that joins, absence of toxicity and tissue regeneration properties.

## MARKET APPLICATIONS

The main sectors of application will be **the medical and the veterinarian** sector, since this invention can be very useful in the treatment and care

of wounds, in the closing of wounds by accident, in medical, cosmetic and plastic surgeries, repair of broken nails, etc.

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COLLABORATION SOUGHT

The research group is looking for Biomedical / pharmaceutical companies interested in acquiring this technology for **commercial exploitation** through model licensing agreements.

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