

NOVEL, BIO-COMPATIBLE PEPTIDE-CONJUGATES FOR HEMOSTASIS

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The modern-day medical field faces a diverse set of challenges including increasing patient age and the containment of costs. Exemplarily, minimally invasive procedures are employed by the surgical profession, resulting in minimization of complications, hospitalization and the need for blood transfusions. These modern surgical techniques require efficient materials for hemostasis, allowing for a superior surgical outcome [1].

Novel hemostatic materials could be synthesized, employing the thrombin-receptor-agonist-peptide-6 (TRAP6) having SFLLRN as active amino acid sequence. Bio-compatible poly(vinyl alcohol) (PVA) was modified with carbic anhydride (norbornene group, NB) and covalently conjugated with a modification of TRAP6 (SFLLRNPNC) by means of thiol-ene photo-click reaction to give PVA-TRAP6 (Figure 1) [2]. Studies proved PVA-NB and PVA-TRAP6 to be non-cytotoxic and clotting times (CT) could be reduced by 45 % using a 0.1 % PVA-TRAP6 solution. Crosslinking PVA-NB *via* dithiothreitol hydrogel particulates (PVA-NB-P) for derivatisation with TRAP6 were afforded as novel class of biomaterials that showed a remarkable decrease of CT [2].

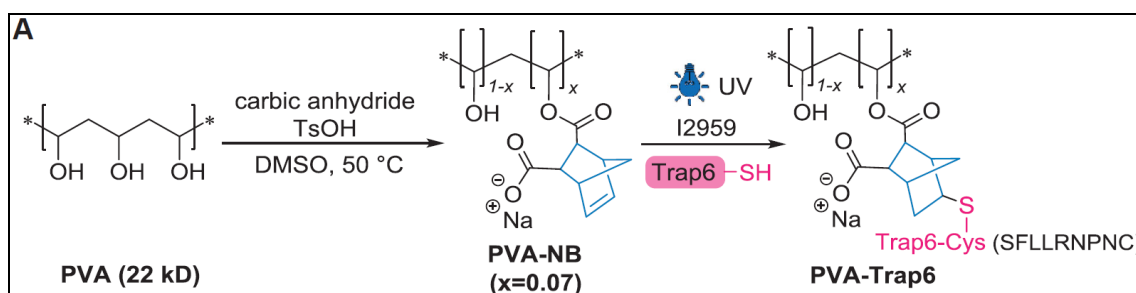


Figure 1: Synthetic pathway to PVA-NB-TRAP6 [2].

[1] W. D. Spotnitz, S. Burks, *Transfusion* **2008**, 48, 1502-1516.

[2] X.-H. Qin, K. Labuda, J. Chen, V. Hruschka, A. Khadem, R. Liska, H. Redl, P. Slezak, *Adv. Funct. Mater.* **2015**, 25, 6606-6617.