

## **RADIATION CROSSLINKED ADVANCED WOUND DRESSING CONTAINING EGG WHITE PROTEINS**

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During the past decades, the use of antibiotics has grown worldwide in different fields, from medicine to agriculture, leading to antibiotic resistance of microbes, which is the cause of thousands of deaths every year worldwide. [1, 2] Finding new antibiotics is becoming more and more difficult because their development is no longer convenient in term of the cost–benefit ratio for the pharmaceutical industry. The interest in egg white proteins, such as ovoalbumin, ovotransferrin and lysozyme, has risen especially because of their demonstrated antimicrobial activities. [3] These antimicrobial proteins can then be used to enrich wound dressing films that requires a high level of control of microbial colonization.

Wound dressing films can be easily produced crosslinking polymers, such as polyvinyl alcohol (PVA) or polyvinyl pyrrolidone, by high-energy radiation. [4] This technique does not require expensive initiators and catalysts and, depending on the irradiation doses, it can guarantee simultaneous product sterilization. PVA hydrogels obtained by irradiation are also transparent, a desirable property for wound dressings. When PVA is mixed with selected polysaccharides, the dressings have shown faster healing rates and scarless healing, probably due to antioxidant properties of polysaccharide fragments produced upon irradiation. [4] Therefore, the aim of this work is to develop hydrogel wound dressings based on the irradiation of PVA and xyloglucan (XG) blends and to investigate the antibacterial properties of the films due to the incorporation of egg white proteins.

### **References**

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### **Acknowledgments**

Horizon Europe Project EURATOM-IA titled “RADiation harvesting of bioactive peptides from egg prOteins and their integration in adVanced functional products — RADOV” Project n. 101061694 is acknowledged.