

## Research and Development Request

<b>Title</b>	Using bacterial cellulose produced by a local bacterial strain in the treatment of wounds and burns
<b>Summary</b>	A Turkish SME is preparing a proposal for the <a href="#">3rd call of ERA CoBioTech</a> . The Project aims to produce Bacterial Cellulose (BC) by a non-pathogenic local bacterial strain which appears as a new wound and burn cover material in the treatment of patients who have wounds caused by bed dependency and burns.
<b>Description</b>	<p>Nowadays, polymers produced from microbial sources are used in the wide range of industrial applications such as food, textile, pharmaceutical industries and medical area. Chitosan, alginate, cyanophycine, poli (gamma-glutamic acid), levan, hyaluronic acid, organic acid polymers, exopolysaccharides such as cellulose and polyhydroxyalkanoates (PHA) are biopolymers that are produced from microorganisms. These polymers have been used for different applications in biomedical area because of their higher biocompatibility and biodegradability. <b>Bacterial cellulose</b> is one of the excellent biopolymer used in biomedical area besides textile, food and electronics. Moreover, it is also known as artificial skin.</p> <p>Skin, the body's main protection barrier, plays a role in the execution of many vital functions, such as controlling body temperature, maintaining water and electrolyte balance, and sensing perception. When these functions disappear with skin injuries such as burns, ulcers, diabetic diseases, physical, chemical, thermal or surgical injuries or trauma, the wound is required to be healed quickly to restore functions. Otherwise, the infection of the wound delays the healing and this situation causes not only the development of the patient's suffering but also results in death. Wound formation is frequently observed in people who are bed-dependent, disabled, and have diabetes. Acute wounds generally occur with temporary factors and can be healed in a short time. On the other hand, chronic wounds, are caused by a constant factor such as diabetes, constant bedtime, etc. are constantly recurring wounds and difficult to heal and last for a long period. The most important healing tool in this situation is to remove the factors that create the wound. However, in cases where this cannot be achieved, the dressing materials to be used together with the factors affecting its healing, have a great importance. Today, modern wound dressings are used for this purpose. Controlled drug release dressings without the need for frequent replacement, provide an excellent approach to deliver medication to the wound areas consistently and continuously over a long period of time.</p> <p>Bacterial Cellulose (BC), which has been synthesized biologically in recent years, appears as new wound and burn cover material. BC dressing is a good</p>

	<p>alternative as it forms a tight barrier, adapts to the wound environment and can maintain not only high moisture retention but also purity and flexibility. In addition, there are several studies on its usage and commercialization due to its high biocompatibility, non-toxic materials, porous structure and good mechanical strength. BC is also considered as Generally Recognized as Safe (GRAS) by the U.S. Food and Drug Administration (FDA).</p> <p>The Turkish SME has produced BC by a non-pathogenic and locally isolated bacterium to use in wound healing. And within this proposal, they aim to use BC in the treatment of patients who are connected to the bed due to the nervous system diseases, undergo cancer treatment, have wounds and burns caused by bed dependency for a long time to bring BC based wound systems containing different active substances to the level of clinical research.</p> <p><b>Deadline for Proposal Submission:</b> June 18, 2020 (13:00 CEST)</p>
<b>IPR Status</b>	<input type="checkbox"/> Patent(s) applied for but not yet granted
<b>Market Keywords</b>	Wound patch, beauty mask, biomaterials
<b>Sector Group</b>	<input type="checkbox"/> Bio Chem Tech <input type="checkbox"/> Healthcare <input type="checkbox"/> Materials <input type="checkbox"/> Women entrepreneurship
<b>Type and Size of Client *</b>	<input type="checkbox"/> Industry SME <= 10
<b>Type and Role of Partner Sought *</b>	<p>Partners from the following countries can participate in this CoBioTech call: Belgium, Estonia, France, Norway, Russia, Slovenia, Germany, Spain, Turkey.</p> <p>Partners sought:</p> <ul style="list-style-type: none"> <li>• Polymer groups that have the ability to modify cellulose and prepare cellulose polymer blends.</li> <li>• Groups which can take part in scale-up</li> <li>• Active pharmaceutical material producers</li> <li>• Institutions that can carry out preclinical and clinical test</li> </ul>
<b>Type of Partnership Considered *</b>	<input type="checkbox"/> Research cooperation agreement