**Supplementary Material**

**Biocompatibility natural effect of rhamnolipids in bioremediation process on different biological systems at the site of contamination**

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**Table ST1.** Acute dermal toxicity of 0.8% formalin (positive control) and phosphate buffer saline (negative control)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Skin irritation | 0.8% Formalin | | | PBS | | |
| Observation time (hr.) | 24 | 48 | 72 | 24 | 48 | 72 |
| Total score | 18 | 13 | 11 | 0 | 0 | 0 |
| Mean score | 6.11 | 5.21 | 7.33 | 0 | 0 | 0 |
| Total of mean score | 31.76 | | | 0 | | |
| PII | 10.58 | | | 0 | | |
| Remarks | Severely irritating | | | Non-irritant | | |

**Table ST2.** Acute dermal toxicity study of the purified biosufactant

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Skin irritation | B.S-OBP1 | | | B.S-OBP2 | | | B.S-OBP3 | | | B.S-OBP4 | | |
| Observation time (hr.) | 24 | 48 | 72 | 24 | 48 | 72 | 24 | 48 | 72 | 24 | 48 | 72 |
| Total score | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mean score | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total of mean score | 0 | | | 0 | | | 0 | | | 0 | | |
| PII | 0 | | | 0 | | | 0 | | | 0 | | |
| Remarks | Non irritant | | | Non-irritant | | | Non-irritant | | | Non-irritant | | |

**Table ST3**. Results of haematological test after treatment with biosurfactants produced by *P*. *aeruginosa* strains showing the positive and negative control values

|  |  |  |
| --- | --- | --- |
| **Components** | **Positive control** | **Negative control** |
| WBC(K) | 5.02±0.66 | 7.11±0.78 |
| Neutrophil (%) | 19.36±2.66 | 16.26±2.4 |
| Lymphocyte (%) | 51.69±1.90 | 52.69±0.9 |
| Monocyte (%) | 4.04±0.97 | 4.00±0.87 |
| Eosinophil (%) | 2.28±0.16 | 3.88±0.63 |
| Basophil (%) | 0.85±0.007 | 0.65±0.01 |
| RBC(M) | 8.36±0.66 | 5.96±0.78 |
| Hb (g.dl−1) | 19.86±2.24 | 17.06±4.0 |
| Hct (%) | 49.66±4.0 | 42.16±2.1 |
| MCV(fl) | 49.36±3.2 | 48.96±3.6 |
| MCH(pg) | 11.55±5.2 | 10.35±5.9 |
| MCHC (g.dl−1) | 44.98±4.5 | 41.98±0.5 |
| Reticulocyte (%) | 3.99±0.71 | 3.63±0.26 |
| PLT(K) | 1620±111.5 | 1360±107.3 |
| PT(sec) | 16.98±1.2 | 13.58±0.2 |
| APTT(sec) | 23.71±5.5 | 27.51±5.9 |

Mean ± S.D of three individual experiments

WBC: white blood cell, RBC: red blood cell, Hb: hemoglobin, Hct: hematocrit, MCV: mean corpuscular volume, MCH: mean corpuscular hemoglobin, MCHC: mean corpuscular hemoglobin concentration, PLT: platelet, PT: prothrombin time, APTT: activated partial thromboplastin time

**C:\Users\pc\Desktop\Rhamnolipid\Egyptian Format\Figure S1. Suppleentary Material.TIF**

**Figure SF1**. The acute dermal irritation study of transdermal patch in rabbits. (A) at 0 h and (D) after 72 h of treatment with biosurfactant from OBP1 strain; (B) at 0 h and (E) after 72 h of treatment with biosurfactant from OBP2 strain; (C) at 0 h and (F) after 72 h of treatment with biosurfactant from OBP3 strain; (G) at 0 h and (H) after 72 h of treatment with biosurfactant from OBP4 strain; (I) Control: after 72 h of treatment with 0.8% HCHO (v/v)