**Supplementary material to:**

**Maltose-mediated long-term stabilization of freeze- and spray- dried forms of bovine and porcine hemoglobin**

IVANA T. DRVENICA[[1]](#footnote-1)\*, ANA Z. STANČIĆ, ANA KALUŠEVIĆ1,2, SMILJA MARKOVIĆ3, JELENA DRAGIŠIĆ MAKSIMOVIĆ4, VIKTOR A. NEDOVIĆ1,

BRANKO M. BUGARSKI6, VESNA Lj. ILIĆ

*Institute for Medical Research, University of Belgrade, Belgrade, Serbia*

*1Faculty of Agriculture, University of Belgrade, Belgrade, Serbia*

*2Institute of Meat Hygiene and Technology, Belgrade, Serbia*

*3Institute of Technical Sciences of the Serbian Academy of Sciences and Arts, Belgrade, Serbia*

*4Institute for multidisciplinary research, University of Belgrade, Belgrade, Serbia*

*5Faculty of Technology and Metallurgy, University of Belgrade, Belgrade, Serbia*



Figure S1. DSC thermogram of un-aged amorphous maltose monohydrate showing the glass transition and enthalpy relaxation endotherm at the glass transition temperature.

Table S1. Spectral characteristics of spray-dried and freeze dried pooled bovine and porcine hemoglobin without (Hb) and with maltose (HbM), rehydrated after 2 years storage at ambient temperature. Hemoglobin stored at -20°C represents a control of the measurement.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Soret band (nm) | Δα/Δβ\* | ΔAsoret/A275nm | ΔAsoret/A577nm | A630 |
|  | Bovine hemoglobin | | | | |
| Hb -20 ºC | 410.5 | 0.94 | 3.93 | 11.41 | 0.012 |
| Hb spray-dried | 406.5 | 0.04 | 4.27 | 28.78 | 0.029 |
| HbM spray-dried | 408.5 | 0.81 | 3.43 | 12.90 | 0.019 |
| Hb lyophilized | 405.0 | 0.05 | 4.47 | 30.38 | 0.027 |
| HbM lyophilized | 411.5 | 0.99 | 3.35 | 10.12 | 0.010 |
|  | Porcine Hb | | | | |
| Hb -20 ºC | 407.5 | 0.94 | 3.67 | 11.73 | 0.016 |
| Hb spray dried | 405.5 | 0.14 | 4.20 | 9.90 | 0.028 |
| HbM spray dried | 406.0 | 0.61 | 3.48 | 10.13 | 0.024 |
| Hb lyophilized | 406.0 | 0.14 | 4.09 | 20.17 | 0.029 |
| HbM lyophilized | 409.0 | 0.90 | 3.49 | 14.11 | 0.014 |
| \* Δα/Δβ = (A577-A560) / (A541-A560) | | |  |  |  |

1. \*Corresponding author. E-mail: ivana.drvenica@imi.bg.ac.rs [↑](#footnote-ref-1)