

1 **Influence of the PPDs in the immune response related to the diagnosis of the Bovine**
2 **Tuberculosis (TBB)**

3 **Echeverría G.** ^{1,2,3*}; **Proaño-Pérez F.** ⁴; **de Waard**⁵ **J.**

4 ¹ Instituto de Investigación en Zoonosis – CIZ, Universidad Central del Ecuador, Ecuador

5 ² Facultad de Ciencias Veterinarias, Universidad de Buenos Aires, Argentina

6 ³ División Investigación y Desarrollo, BioGENA – Quito, Ecuador.

7 ⁴ Facultad de Medicina Veterinaria y Zootecnia, Universidad Central del Ecuador, Ecuador

8 ⁵ One Health Research Group. Facultad de Ciencias de la Salud, Universidad de Las Américas – UDLA – Quito, Ecuador

9 * E-mail: gustavo_echeverria@live.com

10 **Abstract**

11 **Background:** In Ecuador and Latin America, the simple and comparative tuberculin tests are
12 mainly used for the diagnosis and control of bovine tuberculosis in cattle; however, potency
13 assays of commercial purified protein derivative (PPD) are lacking. In Ecuador, only one PPD
14 (originating from New Zealand) is officially used for field trials.

15 **Aim:** Compare the immunological potency caused by protein isolates in the field and in the
16 laboratory.

17 **Methods:** In this study, we worked with 17 bovines that had a comparative tuberculin test
18 with two tuberculin in the field; and blood samples were evaluated with the immune
19 activation of IFN-gamma with six tuberculin (A-F) from different countries. In addition, an
20 immunoassay was performed to identify Paratuberculosis antibodies.

21 **Results:** The regents showed different immune recruitments and mean OD (optical density)
22 activations. In the IFN-gamma tests a high (> 3) and varied ODs were observed; In the PPDa
23 vs. PPDb analysis the activations were different and, in some cases, overlap of a positive
24 animal due to a high PPDa value. All animals were also identified as having paratuberculosis
25 as a possible cross reaction.