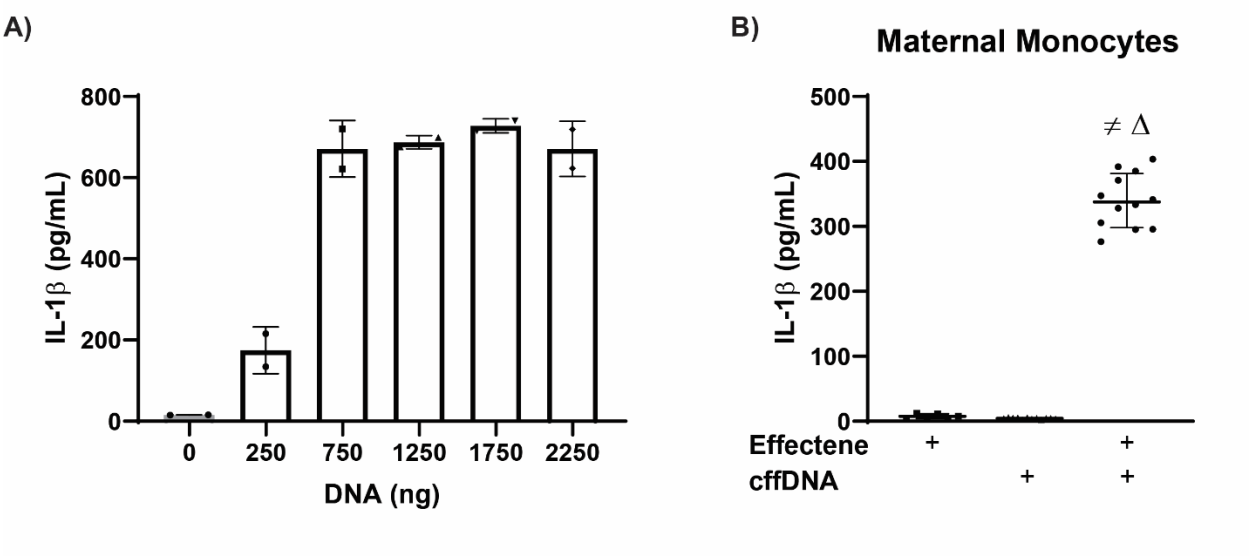
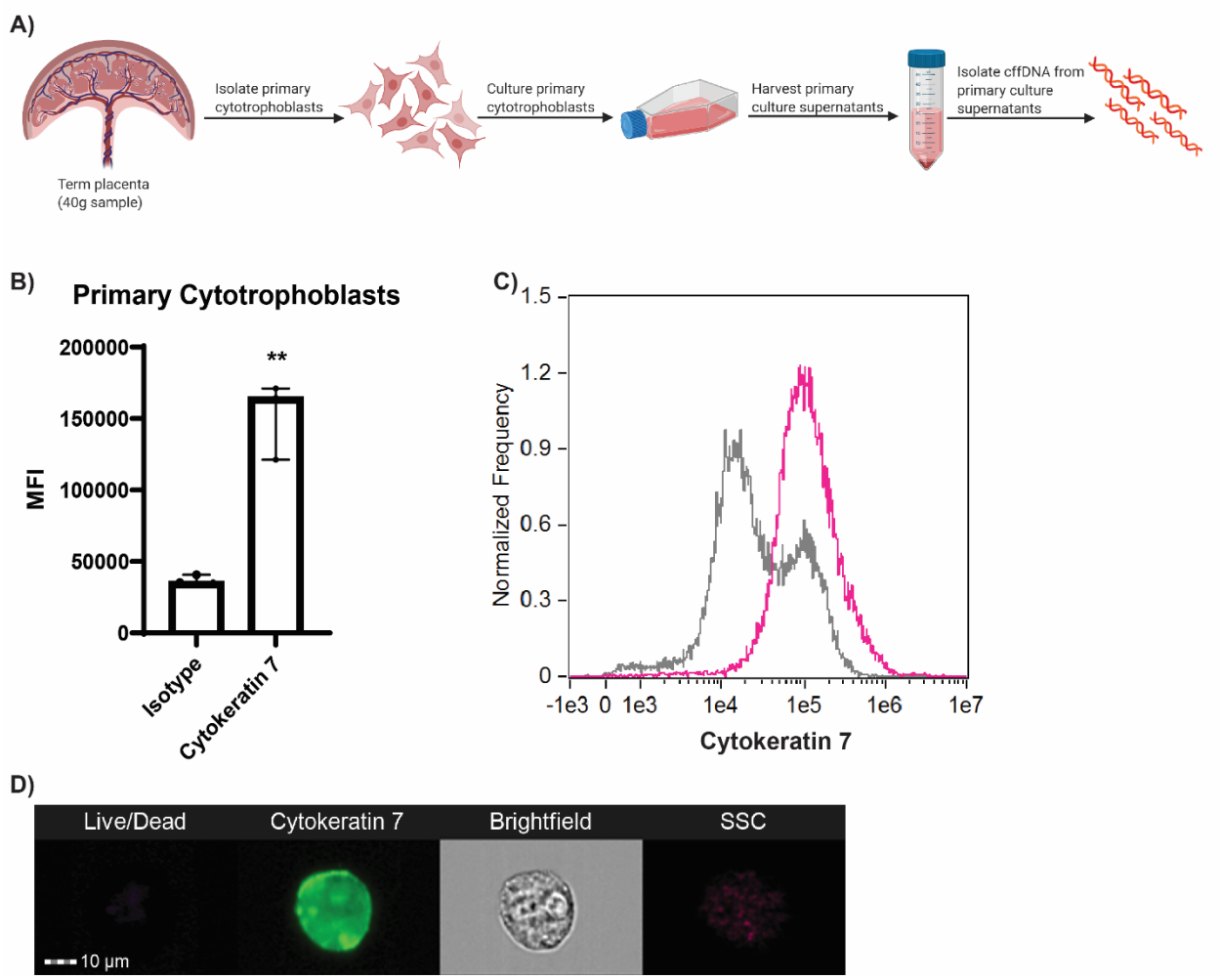


Supplemental Figure 1: Establishment of cffDNA's stimulatory properties on maternal immune cells. A) PBMCs isolated from blood samples of one donor collected at 36-38 weeks' gestation were stimulated overnight with different concentrations of a synthetic, 200 base pair dsDNA oligonucleotide. After overnight incubation, ELISA was used to measure IL-1β levels in the PBMC supernatant. Concentrations were measured in duplicates, error bars represent range. **B)** Maternal PBMCs were stimulated overnight with cffDNA alone (n=6 donors with duplicates), Effectene alone (n=3 donors with duplicates), or cffDNA with Effectene (n=6 donors with duplicates). Levels of IL-1β secretion were measured after overnight incubation by ELISA. P-values were calculated using Kruskal-Wallis test. Significant comparisons ($p \leq 0.05$) are indicated by ≠ Effectene vs. Effectene+cffDNA, Δ cffDNA vs. Effectene+cffDNA.



Supplemental Figure 2: Cytotrophoblast isolation and characterization from human placental tissue. A) 40 grams of healthy, term placenta tissue was collected within 4 hours of delivery, dissected, and digested to isolate CTBs which were cultured. CTB supernatants were harvested to isolate cffDNA using the Qiagen kit. Schematic was designed using BioRender.com **B)** CTBs were harvested and stained for viability and cytokeratin-7 expression. Data represent 3 independent placental tissues, each of which is represented by one data point. 10,000 single, live cells were collected per experiment. Cytokeratin-7 intensity was compared between the isotype control and Cytokeratin 7 antibody (FITC). **C)** Representative image of stained CTB shown by ImageStream. P-value was calculated using Mann-Whitney test. **p<0.005