A. Distribution of single and pairwise GEMs **B.**MEMOTE test score refined GEMs C. Community exchange reactions UMAP Label COVID Pairwise GEM 1.0 Model Healthy Number of pairwise GEMs
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00 Model 300 Covid Covid Healthy 0.8 Healthy 200 9.0 80 0.4 0.2 0.0 amotation abo amotation Ixn amotation dense amotation met UMAP-2 10 20 UMAP-1 Number of single species GEMs **D.** Community exchange reactions E. Community interaction type F. Community growth rate UMAP Sp.2_ Calcium Label Sp.2_H2O 1 COVID Healthy Sp.1 CO₂ GRSp1 Full Sp.2_Calcium-* Sp.2_ * Chloride Sp.1 Calcium-‡ Sp.2_ **≭** Magnesium GRSp2Full-Sp.2 Chloride--0.6 -0.4 -0.2 0.0 Sp.2_Magnesiumflux rate Sp.2 Potassium 25 50 75 * PairwiseB Potassium Growth rate Sp.2_Oxygen -5 UMAP-2 -15 -10 0 flux rate Interaction type Sp.1_H-Amensalism Label Competition Sp.2_H-**COVID** UMAP-1 Neutralism Healthy -1000 -500 500 1000 flux rate