r0 = [0.11; 0.08; 0.105]; % population reproduction rates, per hour

CSD = 1e5; % total initial cells

K = 1e5; % Michaelis-Menten coefficient, fmole/ml

ExtTh = 0.1; % population extinction threshold

DilTh = 1e8; % coculture dilution threshold

tau0 = 0;

tauf = 250; % in hours

dtau = 0.01; % in hours, cell growth update and uptake timescale

at = 0; % avg. consumption values (fmole per cell); alpha\_ij: population i, resource j

bt = 0.04; % avg. production rates (fmole per cell per hour); beta\_ij: population i, resource j

rint = [0; 0.035; 0]; % Nc\*Nm matrix of interaction coefficients

[Nc Nm] = size(rint);

KMM = K\*[1 1 1]; % Michaelis-Menten coefficients, fmole/ml

%% Parameters

R = [0 1 0];

P = [1 0 1];

% interaction matrix

alpha = at\*[0 0 0]; % consumption rates

beta = bt\*[1 0 0.8]; % mediator release rates

A = (R.\*alpha)';

B = (P.\*beta)';