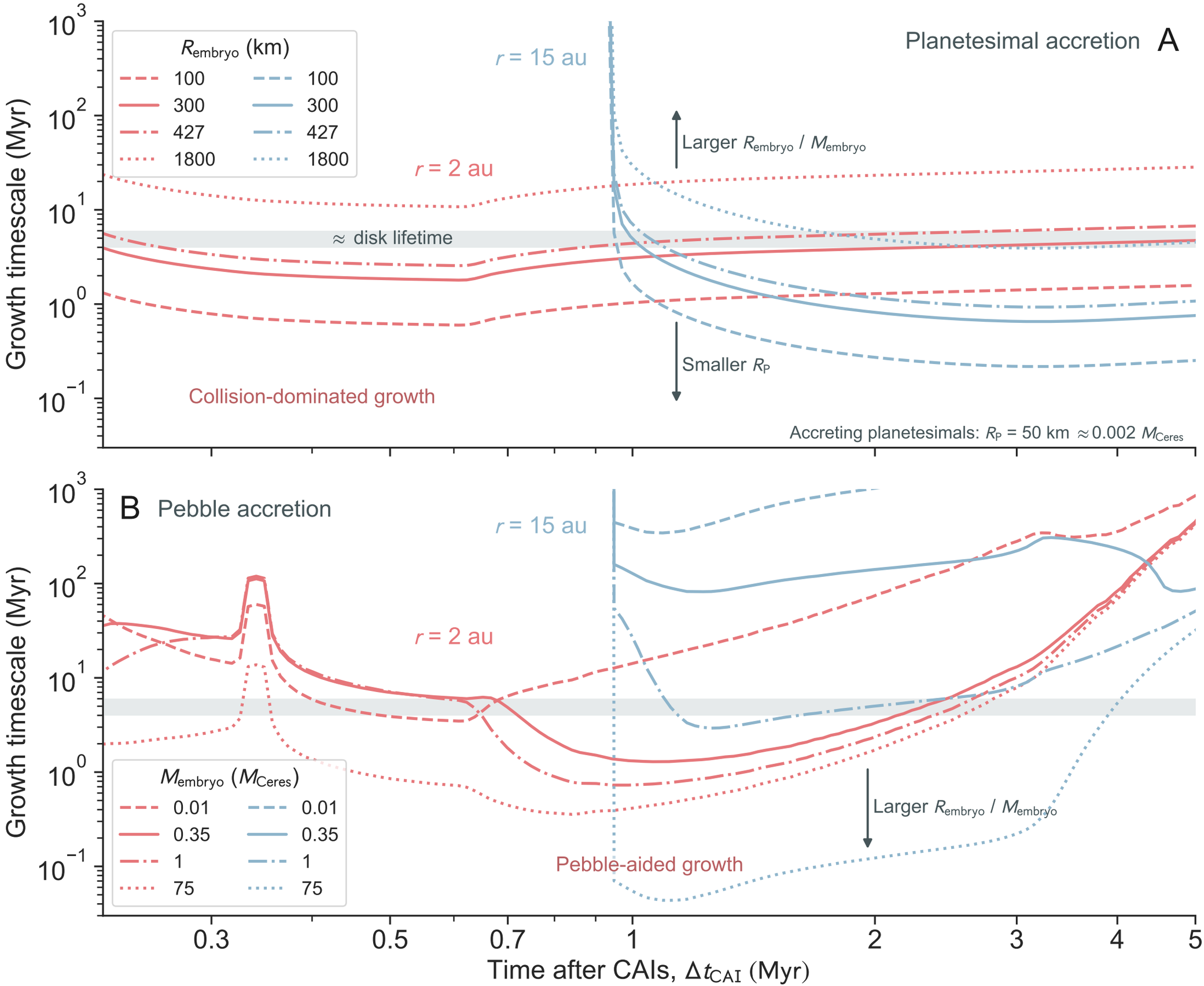
A
Planetesimal accretion
R_{embryo} (km)
100
300
427
1800
100
300
427
1800
r = 15 au
r = 2 au
Larger R_{embryo} / M_{embryo}
≈ disk lifetime
Smaller R_P
Collision-dominated growth
Accreting planetesimals: R_P = 50 km ≈0.002 M_{Ceres}
B
Pebble accretion
r = 15 au
r = 2 au
M_{embryo} (M_{Ceres})
0.01
0.35
1
75
0.01
0.35
1
75
Larger R_{embryo} / M_{embryo}
Pebble-aided growth
Growth timescale (Myr)
Time after CAIs, Δt_{CAI} (Myr)