

What is Claimed Is:

1. A cell culture article, comprising:
a substrate comprising a polygalacturonic acid compound crosslinked with a divalent cation,
the polygalacturonic acid compound selected from at least one of: pectic acid; partially esterified
pectic acid, partially amidated pectic acid and salts thereof;
wherein the substrate is digestible by digestion reagents into components comprising of
galacturonic acid monomers and the divalent cation.
2. The article of claim 1, wherein the substrate is spherical or substantially spherical.
3. The article of claim 2, wherein the substrate comprises a diameter of 10 to 500 micrometers.
4. The article of any of the preceding claims, wherein the divalent cation concentration ranges
from 0.5 to 2 g/l of the substrate
5. The article of claim 4, wherein the divalent cation is selected from the group consisting of
calcium, magnesium and barium.
6. The article of any of the preceding claims, further comprising an adhesion polymer on the
surface of the substrate.
7. The article of claim 6, wherein the adhesion polymer comprises a polypeptide.
8. The article of any of claims 6-7, wherein the adhesion polymer is grafted to or coated on the
surface of the substrate.
9. The article of any one of the preceding claims, wherein the polygalacturonic acid compound is
ionotropically crosslinked.

10. The article of any one of the preceding claims, wherein the digestion reagents comprise at least one of EDTA and an enzyme.
11. The article of claim 10, wherein the enzyme is pectinase.
12. The article of any one of claims 6-8, wherein at least a portion of the adhesion polymer becomes soluble when the substrate is digested.
13. The article of claim 12, wherein the portion of the adhesion polymer that becomes soluble is at least about 40%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, or at least about 95%.
14. A method for culturing cells, the method comprising contacting cells with a cell culture medium having the cell culture article according to any of claims 1-13, and culturing the cells in the medium.
15. A method for harvesting cultured cells, the method comprising:
 - culturing cells on the surface of the cell culture article of any of claims 1-13; and
 - contacting the cultured cells with a mixture of pectinase and a chelator to separate the cells from the cell culture article.
16. The method of claim 15, wherein the chelator comprises EDTA.
17. A method of harvesting cultured cells from a dissolvable substrate, the method comprising:
 - separating the cultured cells from the substrate by digesting the substrate via exposure of the substrate to (i) a chelating agent, (ii) an enzyme, or (iii) a chelating agent and an enzyme, the separating resulting in a harvest solution; and

performing a series of wash and/or centrifugation cycles of components of a harvest solution following the separating,

wherein the substrate comprising a polygalacturonic acid compound selected from at least one of: pectic acid; partially esterified pectic acid, partially amidated pectic acid and salts thereof, and an adhesion polymer on the surface of the polygalacturonic acid compound.

18. The method of claim 17, wherein the enzyme comprises a non-proteolytic enzyme.
19. The method of claim 18, wherein the non-proteolytic enzyme is selected from the group consisting of pectinolytic enzymes and pectinases.
20. The method of any of claims 17-19, wherein digesting the dissolvable substrate comprises exposing the dissolvable substrate to between about 1 U/mL and about 200 U/mL of the enzyme, or between about 1 U/mL and about 50 U/mL, or between about 1 U/mL and about 30 U/mL, or less than about 30 U/mL.
21. The method of any of claims 17-20 comprising exposing the dissolvable foam scaffold to the chelating agent at a concentration of less than about 10 mM, less than about 9 mM, less than about 8 mM, less than about 7 mM, less than about 6 mM, less than about 5 mM, less than about 4 mM, less than about 3 mM, less than about 2 mM, or equal to or less than about 1 mM.
22. The method according to any of claims 17-21, wherein the chelating agent is EDTA.
23. The method of any one of claims 17-22, wherein, after digesting, at least a portion of the adhesion polymer becomes soluble.
24. The method of claim 23, wherein the portion of the adhesion polymer that becomes soluble is at least about 40%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, or at least about 95%.

25. The method of claim 23 or claim 24, further comprising removing a non-soluble portion of the adhesion polymer by adding a protease to the harvest solution.
26. The method of claim 25, wherein the protease is trypsin.