

## CLAIMS

We claim:

1. A system comprising an artificial endosymbiont, a eukaryotic cell, a container, a means for introducing the artificial endosymbiont into the eukaryotic cell, and an anti-artificial-endosymbiont antibody, wherein the artificial endosymbiont, the eukaryotic cell, and the antibody are inside the container.
2. A system comprising an artificial endosymbiont, a eukaryotic cell, a container, a means for introducing the artificial endosymbiont into the eukaryotic cell, and a means for detecting the mammalian cell containing the magnetic bacteria, wherein the artificial endosymbiont is a magnetic bacteria, wherein the eukaryotic cell is a mammalian cell, and wherein the artificial endosymbiont and the eukaryotic cell are inside the container.
3. The systems of claim 1 or 2, wherein the artificial endosymbiont is modified to have a reporter.
4. The system of claim 3, wherein the reporter is a luciferase protein or a fluorescent protein.
5. The system of claim 4, wherein the reporter is a green fluorescent protein.
6. The system of claim 1 or 2, further comprising a selective agent wherein the selective agent is inside the container.
7. The system of claim 6, wherein the selective agent is selected from the group consisting of a gentamycin, a kanamycin, and a chloramphenicol.
8. The system of claim 2, further comprising an anti-artificial-endosymbiont antibody.
9. The system of claims 1 or 8, wherein the anti-artificial-endosymbiont antibody is labelled with a reporter.
10. The system of claim 9, wherein the anti-artificial-endosymbiont antibody is a polyclonal antibody.

11. The system of claim 2, wherein the means for introducing the artificial endosymbiont into the eukaryotic cell comprises exposing the artificial endosymbiont and eukaryotic cell to a magnetic field.

12. The system of claim 11, wherein the means for introducing is a permanent magnet.

13. A method for introducing an artificial endosymbiont to a eukaryotic cell comprising the steps of:

- placing the artificial endosymbiont in a container,
- placing the eukaryotic cell in the container,
- introducing the artificial endosymbiont into the eukaryotic cell with a means for introducing the artificial endosymbiont into the eukaryotic cell, and
- exposing the eukaryotic cell with the artificial endosymbiont to an anti-artificial-endosymbiont antibody.

14. A method for introducing an artificial endosymbiont to a eukaryotic cell comprising the steps of:

- placing the artificial endosymbiont in a container wherein the artificial endosymbiont is a magnetic bacteria,
- placing the eukaryotic cell in the container wherein the eukaryotic cell is a mammalian cell,
- introducing the artificial endosymbiont into the eukaryotic cell with a means for introducing the artificial endosymbiont into the eukaryotic cell, and
- detecting the eukaryotic cell with the artificial endosymbiont.

15. The method of claim 14, wherein the means for detecting is an optical device.

16. The method of claims 13-15, further comprising the step of presenting the mammalian cells and magnetic bacteria with a selective agent.

17. The method of claims 13-15, wherein the means for introducing the magnetic bacteria into the mammalian host cell comprises exposing the artificial endosymbiont and mammalian host cell to a magnetic field.

18. The method of claims 13-15, wherein the magnetic bacteria are modified to have a reporter.

19. The method of claim 18, wherein the reporter is a green fluorescent protein.
20. The method of claims 14-15, further comprising the step of exposing the mammalian cell with the magnetic bacteria to an anti-magnetic-bacteria antibody.