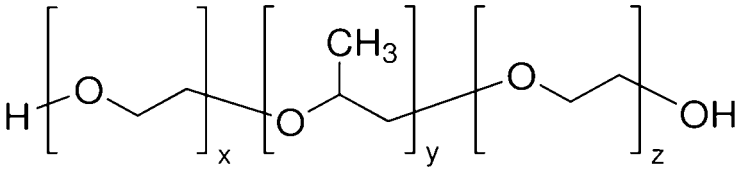
~~WHAT IS CLAIMED IS:~~CLAIMS

1. A poloxamer composition for in vitro cell culture in chemically defined cell culture medium, the composition comprising a poloxamer having the formula I:



I

wherein y is ~~about~~ 15 to ~~about~~ 26; the sum of x and z is from ~~about~~ 81 to ~~about~~ 100; and the ~~composition~~ poloxamer has an average molecular weight in the range of ~~about~~ 6,000 g/mol to ~~about~~ 8,000 g/mol.

2. The composition of claim 1, wherein y is ~~about~~ 15, ~~about~~ 16, ~~about~~ 17, ~~about~~ 18, ~~about~~ 19, ~~about~~ 20, ~~about~~ 21, ~~about~~ 22, ~~about~~ 23, ~~about~~ 24, ~~about~~ 25, or ~~about~~ 26.

3. The composition of claims 1 or 2, wherein the sum of x and z is ~~about~~ 81, ~~about~~ 82, ~~about~~ 83, ~~about~~ 84, ~~about~~ 85, ~~about~~ 86, ~~about~~ 87, ~~about~~ 88, ~~about~~ 89, ~~about~~ 90, ~~about~~ 91, ~~about~~ 92, ~~about~~ 93, ~~about~~ 94, ~~about~~ 95, ~~about~~ 96, ~~about~~ 97, ~~about~~ 98, ~~about~~ 99, or ~~about~~ 100.

4. The composition of any of claims 1-3, wherein the composition comprises the poloxamer having an average molecular weight of from 6,000 g/mol to 7,600 g/mol.

~~4.~~5. The composition of any of claims 1-~~3~~4, wherein the composition has an average molecular weight of ~~about~~ 6,000 g/mol, ~~about~~ 6,200 g/mol, ~~about~~ 6,400 g/mol, ~~about~~ 6,600 g/mol, ~~about~~ 6,800 g/mol, ~~about~~ 7,000 g/mol, ~~about~~ 7,200 g/mol, ~~about~~ 7,400 g/mol, ~~about~~ 7,600 g/mol, ~~about~~ 7,800 g/mol, or ~~about~~ 8,000 g/mol.

~~5. A poloxamer composition having an average molecular weight that is less than Poloxamer 188.~~

~~6. A method of making the composition of any of claims 1-5 substantially as disclosed herein and in the accompanying Figures.~~

~~7.~~6. Use of the composition of any of claims 1-5 ~~substantially as disclosed herein and in the accompanying Figures~~ in cell culture.

~~8. The methods, compositions, uses, and inventions as substantially disclosed herein and in the accompanying Figures.~~