

```
function [dydt] = F1_batch(t,y,p)
```

```
    cA = y(1);
```

```
    cR = y(2);
```

```
    cS = y(3);
```

```
    r1 = cA * p.k1;
```

```
    r2 = cR * p.k2;
```

```
    r3 = cS * p.k3;
```

```
    dcAdt = -r1 + r2 - r3;
```

```
    dcRdt = r1 - r2;
```

```
    dcSdt = 2 * r3;
```

```
    dydt = [dcAdt, dcRdt, dcSdt]';
```

```
end
```