

## Kap 16 Kemisk stabilitet i Homepump

Substans Läkemedelsnamn	Koncentration	Lösning	Rumstemp.	Kyl	Frys	Ref.
Acyklovir Na	5 mg/ml 10 mg/ml 10 mg/ml	NaCl NaCl	10 dygn 10 dygn 10 dygn	30 dygn <sup>2</sup> 30 dygn <sup>2</sup> 30 dygn <sup>2</sup>	- -	20 1 HH
Albumin	200 mg/ml	RTU	-	-	-	35 <sup>16</sup>
Amikacin SO <sub>4</sub>	0,25 - 5 mg/ml 5 mg/ml 10 mg/ml 10 - 20 mg/ml 10 - 20 mg/ml	NaCl NaCl	- 24 h 24 h 24 h 24 h	60 dygn <sup>13</sup> 10 dygn 14 dygn 28 dygn <sup>7</sup> 30 dygn	30 dygn <sup>13</sup> 30 dygn - 30 dygn	8 <sup>1</sup> 20, 8 39 19 HH
Aminophylline	5 - 25 mg/ml 5 - 20 mg/ml	NaCl	24 h 24 h	35 dygn <sup>8</sup> 28 dygn	- -	19 16
Amfotericin B**	0,2 mg/ml	D5W	24 h	10 dygn	-	1
Ampicillin Na	0,01 - 0,03 mg/ml 20 mg/ml	NaCl	8 h 8 h	3 dygn 3 dygn	- -	20 1
Amipicillin Na/ Sulbactam Na	30/15 mg/ml	NaCl	-	3 dygn	-	2
Azitromycin	1 - 2 mg/ml	NaCl/D5W	24 h	7 dygn	-	8
Azlocillin	50 mg/ml	NaCl	24 h	7 dygn	-	2
Aztreonam	13,3-26,7 mg/ml 20 - 30 mg/ml 5 - 60 mg/ml 60 mg/ml 20 - 60 mg/ml 5 - 50 mg/ml	NaCl NaCl NaCl NaCl/WFI NaCl NaCl	7 dygn - 24 h 24 h - 24 h	7 dygn 14 dygn 28 dygn 28 dygn <sup>7</sup> 30 dygn 28 dygn	- - - - -	3 2 39 15,19 31 HH
Bleomycin SO <sub>4</sub>	1,07 IU/ml	NaCl	24 h 5 dygn (37°C)	-	-	16 16
Bensylpenicillin®	10 - 60 mg/ml	buffrat i 0,01 M Nacitrat	24 h	7 dygn <sup>13</sup>	-	20
Bupivacain HCL	2,5 mg/ml 5 mg/ml 0,0625 - 0,5 mg/ml	- NaCl/RTU	30 dygn 30 dygn	- -	- -	21 HH
Bupivacain HCL/ Ceftriaxone	0,5 mg/ml + 3,7 mg/ml ab.	-	48 h	-	-	22
Bupivacain HCL/ Cefazolin	0,5 mg/ml + 7 mg/ml ab.	-	3 dygn	-	-	22
Bupivacain/ Metylparaben	2,5 mg, 5 mg/ml /1 mg/ml	-	30 dygn	-	-	28
Bupivacain/ Dexametasonfosfat	5 mg/ml 0,4 mg/ml		5 dygn	7 dygn		HH

Substans Läkemedelsnamn	Koncentration	Lösning	Rumstemp.	Kyl	Frys	Ref.
Bupivacain/ Ketorolac/ Morfin	5 mg/ml 0,24 mg/ml/ 0,032 mg/ml	-	5 dygn	7 dygn	-	29
Carbenicillin	40 mg/ml	D5W	24 h	3 dygn	4 v	39
Caspofungin	0,2 - 0,5 mg/ml <i>Test planerad</i>	NaCl	60 h	14 dygn	-	20
Cefazolin Na	20 mg/ml 5 - 20 mg/ml	NaCl NaCl	24 h 24 h	7 dygn 10 dygn	-	1 HH
Cefepim	20 mg/ml 40 mg/ml	NaCl	24 h-	14 dygn 15 dygn	-	2 32
Cefonocid	20 mg/ml	D5W	24 h	3 dygn	8 v	39
Cefoperazone Na	2 - 50 mg/ml	NaCl/D5W	24 h	5 dygn	3 v	8,9
Cefotaxim	10 - 20 mg/ml 20 mg/ml	NaCl/D5W NaCl	24 h 24 h	14 dygn 14 dygn	13 v -	8 39
Cefotaxim Na	16,67 mg/ml	NaCl	24 h	14 dygn	13 v	1
Cefotetan disodium	10 - 40 mg/ml 20 mg/ml	NaCl/D5W	24 h	4 dygn	1 v 60 dygn	8
Cefteolozan/ Tazobactam	150 mg 1500 mg	NaCl/D5W	24 h	10 dygn		40
Cefotiam	20 mg/ml	NaCl/D5W	24 h	7 dygn	-	39
Cefoxitin Na	10 mg/ml 20 mg/ml	NaCl/D5W	24 h	7 dygn 13 dygn	-	8, 9 8
Cefpirome SO <sub>4</sub>	20 mg/ml	NaCl	-	3 dygn	-	2
Ceftazidim	20 mg/ml 5 - 30 mg/ml 5 - 40 mg/ml 60 mg/ml 5 - 40 mg/ml	NaCl   NaCl	18 h - 24 h - 24 h	7 dygn 28 dygn 14 dygn 14 dygn <sup>3</sup> 14 dygn	84 dygn - - 14 dygn -	1 15 2 16, 18 HH
Ceftizoxime Na	20 - 40 mg/ml	NaCl/D5W	48 h	7 dygn	-	8

Substans Läkemedelsnamn	Koncentration	Lösning	Rumstemp.	Kyl	Frys	Ref.
Ceftriaxon Na	10 - 100 mg/ml	NaCl	72 h	10 dygn	-	8
	10 - 40 mg/ml	NaCl/D5W	-	-	26 v.	8
	20 mg/ml	NaCl	-	-	-	1
	10 - 40 mg/ml	NaCl	72 h	14 dygn	-	HH
Cefuroxim	1 - 30 mg/ml	NaCl/D5W	24 h	7 dygn	6 mån.	8, 9
Chirocain	2,5 mg/ml, 5 mg/ml	RTU	30 dygn <sup>12</sup>	-	-	30
Cephalotin Na	20 mg/ml	D5W	12 h	4 dygn	6 v	39
Cephapirin Na	20 mg/ml	D5W	24 h	10 dygn	8 v	39
Cephradine	10 mg/ml	D5W	10 h	2 dygn	6 v	39
Cimetidin HCL	6 mg/ml	D5W	48 h	8 dygn	4 v	39
Ciprofloxacin	0,5 - 2 mg/ml	NaCl/D5W	14 dygn	14 dygn	-	8, 9
	2 mg/ml	RTU	24 h	28 dygn <sup>4</sup>	-	16,19
Cisplatin	0,2 mg/ml	NaCl	14 dygn	-	-	8
	0,05 - 0,5 mg/ml	NaCl	28 dygn	-	-	8
	0,8 mg/ml	NaCl	7 dygn	7 dygn	-	8
Cloxacillin Na	5-50 mg/ml	NaCl/D5W	24 h	7 dygn	-	39
	5-40 mg/ml	NaCl	4 dygn	-	-	39
	80 mg/ml	NaCl	48 h	5 dygn	-	20
Colistimethate Na Coly-Mycin Colistin	≤75 mg colistin/ml	NaCl	7 dygn	7 dygn	-	8 <sup>1</sup>
	≤3,3 mg colimycin/ml 0,0125-0,0375MU/ml	NaCl	24 h	28 dygn	-	HH
Cyclofosfamid	4,5 mg/ml <i>Test planerad</i>	NaCl	7 dygn	7 dygn	-	3
Cytarabin	0,08 - 2 mg/ml	NaCl/D5W	48 h	48 h	-	20
	0,2, 5 mg/ml	NaCl/D5W	24 h	-	-	20
	0,8 mg/ml	NaCl/D5W	13 dygn	-	-	20
	20 mg/ml	NaCl/D5W	1 - 9 dygn	14 dygn	-	20
	1,25 - 25 mg/ml	NaCl/D5W	7 - 28 dygn <sup>9</sup>	28 dygn	-	20
	5 mg/ml	D5W	30 dygn	30 dygn	30 dygn	8 <sup>1</sup>
Daptomycin	5 mg/ml	NaCl	14 dygn	14 dygn	-	39
	20 mg/ml <i>Test planerad</i>		-	10 dygn	-	38
Desferoxamin	0,022 mg/ml	NaCl	48 h	14 dygn	-	39
	0,1 mg/ml		24 h			
	500 mg/ml		7 dygn			
Desferoxamin Mesylate	5 mg/ml	NaCl	12 dygn	-	-	2
	5 - 160 mg/ml		-	28 dygn	-	15
	73 mg/ml	NaCl	7 dygn	28 dygn <sup>10</sup>	-	16
	5-95 mg/ml		15 dygn	-	HH	
Dexametason	0,8 mg/ml	D5W	24 h	48 h	-	39

Substans Läkemedelsnamn	Koncentration	Lösning	Rumstemp.	Kyl	Frys	Ref.
Dexametason fosfat	0,167 mg/ml	NaCl	7 dygn	-	-	34
Doxorubicin	2 mg/ml	NaCl	24 h	14 dygn	-	39
Doxorubicin HCl	0,1 mg/ml 2 mg/ml 5 mg/ml <i>Test planerad</i>	NaCl	7 dygn - 7 dygn	- 48 h -	- - -	20 1 20
Doxycyklin	0,1 - 1 mg/ml 1 mg/ml	NaCl/D5W D5W	48 h -	3 dygn -	- 8 v.	8 8
Ertapenem Na	10 mg/ml 20 mg/ml 10 mg/ml 20 mg/ml	NaCl  NaCl	24 h 18 h 24 h 18 h	7 dygn 5 dygn 9 dygn 7 dygn	- - -	26 26  HH
Erytromycin	5 mg/ml	D5W	8 h	24 h	1 v	39
Etoposid	0,1 - 0,4 mg/ml <i>Test planerad</i>	NaCl	9 dygn	-	-	4
Flukloxacillin	10 mg/ml 20 - 30 mg/ml 40 - 50 mg/ml <i>Väntar på resultat</i>	NaCl	24 h 24 h 24 h	21 dygn <sup>8</sup> 14 dygn <sup>8</sup> 7 dygn <sup>8</sup>	- - -	16,19 16,19 16,19
Flukonazol	2 mg/ml	RTU*	24 h	14 dygn	-	2
Fluorouracil, 5-Fu	50 mg/ml 1 - 25 mg/ml 50 mg/ml 1 - 50 mg/ml	RTU* NaCl RTU* NaCl	8 veckor 45 dygn 45 dygn 45 dygn	- 45 dygn - .	- - - -	1 14 14 HH
Fluorouracil + Sodiumfolinat	36 + 8,8 mg/ml	NaCl	7 dygn	-	-	39
Foskarnet Na	12 mg/ml 24 mg/ml <i>Test planerad</i>	NaCl/D5W RTU*	7 dygn 7 dygn	14 dygn 14 dygn	- -	1 1
Fosfomycin Na	2 mg/ml	NaCl	7 dygn	-	-	39
Furosemid	10 mg/ml 0.5, 5, 10 mg/ml	NaCl	3 mån <sup>1</sup> 4 dygn+24 h <sup>5</sup>	- 7 dygn+24h <sup>5</sup>	- -	8 22
Ganciklovir Na	1.4, 4, 7 mg/ml 2 - 5 mg/ml 5 mg/ml 10 mg/ml <i>Väntar på resultat</i>	NaCl	7 dygn 7 dygn 24 h 24 h	80 dygn - 15 dygn 15 dygn	365 dygn - - -	8 <sup>1</sup> 1 3 3
Gemcitabin- Hydroklorid	0.1, 10, 38 mg/ml	D5W NaCl	7 dygn <sup>15</sup>	-	-	8 <sup>1</sup>
Gentamicin SO <sub>4</sub>	0,8 mg/ml 0,6 mg/ml 1 mg/ml 4,8 mg/ml 4,8 mg/ml 0,8 - 4 mg/ml	NaCl D5W NaCl/D5W NaCl NaCl NaCl	24 h - - - 24 h 24 h	4 dygn <sup>1</sup> 30 dygn - 28 dygn <sup>4,7</sup> 28 dygn 28 dygn	- - 30 dygn - - -	1 1 8 15,19 33 HH

Substans Läkemedelsnamn	Koncentration	Lösning	Rumstemp.	Kyl	Frys	Ref.
Granisetron HCl	0,02 mg/ml	NaCl D5W	-	7 dygn 14 dygn	-	7
Heparin Na	1 U/ml 500 IU/ml	NaCl	3 veckor <sup>1</sup> 3 veckor <sup>1</sup>	- -	- -	8 8
Ifosfamid	0,6 mg/ml 80 mg/ml <i>Test planerad</i>	NaCl	7 dygn 9 dygn	6 veckor <sup>1</sup> -	- -	20 20
Imipenem	5 mg/ml	NaCl	24 h	14 dygn	-	39
Imipenem-Cilastin Na	5 mg/ml	NaCl	10 h	2 dygn	-	39
Kalciumfolinat	4 mg/ml	NaCl	7 dygn	7 dygn	-	20
Klindamycin PO <sub>4</sub>	10 mg/ml 6, 9, 12 mg/ml 6 mg/ml <i>2 - 12 mg/ml</i>	NaCl NaCl D5W <i>NaCl</i>	24 h 16 dygn 24 h <i>15 dygn</i>	10 dygn 32 dygn 10 dygn <i>30 dygn</i>	- 8 v. - -	1 8 20 <i>HH</i>
Levofloxacin	5 mg/ml	NaCl/D5W	72 h	14 dygn	6 mån.	8
Lidocain HCL	10 mg/ml	-	30 dygn	-	-	21
Lincomycin HCL	10 mg/ml	D5W	24 h	1 dygn	-	1, 39
Mesna	40 mg/ml <i>Test planerad</i>	D5W	7 dygn	14 dygn	-	8 <sup>1</sup>
Meropenem	4 mg/ml 5 mg/ml 10 mg/ml 10 mg/ml 20 mg/ml 20 mg/ml <i>Vid uppvärmning från kyl till rumstemp minskar koncentrationen av Meropenem med 1-2%</i> 5 mg/ml 5 mg/ml 10 mg/ml 10 - 20 mg/ml 20 mg/ml	NaCl         <i>NaCl</i>	- 26 h 20h - 12 h -  24 h 24 h 24 h 24 h 24 h	7 dygn <sup>5</sup> 4 dygn+6 h <sup>3</sup> 3 dygn+6 h <sup>3</sup> 5 dygn <sup>5</sup> 24 h + 6 h <sup>3</sup> 5 dygn <sup>5</sup> 5 dygn, 90% 7 dygn, 89% 5 dygn, 89% 3 dygn, 90% 5 dygn, 84%		23 13 13 23 13 23 <i>HH</i> <i>HH</i> <i>HH</i> <i>HH</i> <i>HH</i>
Meticillin Na	20 mg/ml	D5W	24 h	4 dygn	4 v	39
Metotrexat Na	0,03 mg/ml 1,25 - 12,5 mg/ml	D5W NaCl	7 dygn 7 dygn	- 105 dygn	-	8 8
Metronidazol	5 mg/ml	RTU	24 h	10 dygn <sup>18</sup>		

Substans Läkemedelsnamn	Koncentration	Lösning	Rumstemp.	Kyl	Frys	Ref.
Metylprednisolon Na	10 mg/ml	NaCl	24 h	7 dygn	-	2
Mezlocillin Na	20 mg/ml	D5W	48 h	7 dygn	4 v	39
Minocyklin	0,2 mg/ml	D5W	24 h	1 dygn	-	39
Mitoxantron	0,04 mg/ml 0,16 mg/ml	NaCl	8 dygn	8 dygn	-	20
Morfin HCL	10 - 40 mg/ml	RTU	6 v.	6 v.	-	5
Morfin SO <sub>4</sub>	20 mg/ml 2 - 20 mg/ml	NaCl NaCl	7 dygn 28 dygn	- -	- -	3 HH
Moxolactam Na	20 mg/ml	D5W	24 h	4 dygn	6 mån	39
Natriumklorid	9 mg/ml	NaCl	15 dygn	15 dygn		39
Nafcillin Na	10 mg/ml <i>Test planerad</i>	NaCl	24 h	3 dygn	-	3
Netilmicin	0,8 mg/ml 1 mg/ml 4 mg/ml	NaCl D5W NaCl	24 h 72 h 24 h	3 dygn	-	1 39 1
Ofloxacin	0,4 - 4 mg/ml	NaCl/D5W	72 h	14 dygn	6 mån.	9
Ondansetron HCL	0,03-0,3 mg/ml	NaCl/D5W	-	14 dygn	-	39
Oxacillin	10 - 100 mg/ml	NaCl D5W	7 dygn 2 dygn	8 dygn	30 dygn	17
Paclitaxel	6 mg/ml	NaCl/D5W	7 dygn	7 dygn	-	39
Pamidronsyra Na	0,03 mg/ml 0,03 mg/ml 0,4 mg/ml	NaCl D5W NaCl	29 dygn 2 dygn 2 dygn	- 27 dygn 27 dygn	-	39
Pamidronate SO <sub>4</sub>	0,225 - 0,360 mg/ml <i>Test planerad</i>	NaCl	48 h	-	-	3
Penicillin G-K	10,000 U/ml 20,00 U/ml	D5W NaCl	24 h 24 h	24 h 4 dygn	30 dygn	8 8
Piperacillin	0,8 mg/ml	NaCl	24 h	14 dygn	-	39
Piperacillin Na	0,03 - 0,05 mg/ml 30 mg/ml 10 - 80 mg/ml	NaCl	24 h 24 h 24 h	7 dygn 14 dygn 14 dygn	4 v. 30 dygn -	20 1, 2 2
Piperacillin Na/ Tazobactam Na	18 + 2,3 mg/ml 10 - 80 + 1-4 mg/ml 50 + 6,25 mg/ml 10 mg/ml 40 - 80 mg/ml	D5W NaCl NaCl NaOH NaOH	7 dygn 24 h 5 dygn 7 dygn <sup>19</sup> 7 dygn <sup>12</sup>	- 28 dygn <sup>8</sup> 15 dygn 28 dygn <sup>12</sup> 28 dygn <sup>12</sup>	- - - - -	3 19 HH HH
Prednisolon	0,67 mg/ml	NaCl	10 dygn	-	-	

Substans Läkemedelsnamn	Koncentration	Lösning	Rumstemp.	Kyl	Frys	Ref.
Quinpristin/ Dalfopristin	0 - 2 mg/ml	D5W	5 h	54 h	-	10
Ranitidin HCl	0,5 - 2 mg/ml	NaCl/D5W	7 dygn	30 dygn	30 dygn	8, 11
Rifampicin	0,75 mg/ml	D5W	7 dygn	-	-	3
Ropivacain HCL	2 mg/ml 7,5 mg/ml 1 - 5 mg/ml	- NaCl	30 dygn 14 dygn 45 dygn	-	-	21 21 HH
Ropivacain/Ketorolak	1 mg/ml			7 dygn		HH
Teicoplanin	1-4 mg/ml	NaCl	24 h	28 dygn	-	39
Terbutalin SO <sub>4</sub>	4 µg/ml 150, 300 µg/ml 500 µg/ml 350 µg/ml <i>Test planerad</i>	D5W D5W D5W WFI	7 dygn 7 dygn 7 dygn -	28 dygn <sup>8</sup> 28 dygn <sup>10</sup> 35 dygn <sup>10</sup> 35 dygn <sup>10</sup>	- - - -	19 19 19 19
Trimetoprim/ sulfametoxazol	16 + 80 mg/ml	-	48 h <sup>1</sup>	-	-	8
Ticarcillin Disodium Klavulanate K	31 mg/ml <i>Test planerad</i>	NaCl	24 h	7 dygn	-	2
Tobramycin SO <sub>4</sub>	0,2 - 10 mg/ml 1 - 10 mg/ml	NaCl NaCl	24 h 24 h	14 dygn 14 dygn	30 dygn -	39 HH
Vancomycin	4 mg/ml	NaCl	24 h	14 dygn	-	39
Vancomycin HCl	5 mg/ml 5 - 15 mg/ml 5 mg/ml 15 mg/ml	NaCl NaCl D5W NaCl	24 h 24 h 17 dygn 48 h	14 dygn 28 dygn 63 dygn 30 dygn	- - -	1 16,19 12 HH
Venofer	1 mg/ml	NaCl	1 dygn	1 dygn	-	39
Vinkristin	0,033 mg/ml 0,053 mg/ml <i>Test planerad</i>	NaCl	14 dygn <sup>11</sup> 14 dygn <sup>11</sup>	- -	- -	27 27

### Fotnoter:

\* RTU = "Ready to use" = färdig att användas

\*\* Uppmärksamhet på substansens utfällningsrisk beroende av beredning, lagring, koncentration, PH och lösningsmedel.

<sup>1</sup> Studie utförd på jämförbar behållare.

<sup>2</sup> Uppmärksamma ämnets risk för utfällning, vilket kan bero på preparation, lagring, koncentration pH el. lösningsmedel.

<sup>3</sup> Kylförvaring + 6 h rumstemp.

- <sup>4</sup> Risk för utfällning i kylskåp.
- <sup>5</sup> Kyla=5° C
- <sup>6</sup> Licenspreparat
- <sup>7</sup> +1 h i rumstemperatur +1 h i 37° C
- <sup>8</sup> +1 h i rumstemperatur +2 h i 37° C
- <sup>9</sup> 7 dygn i 22° C, 28 dygn i 4° C
- <sup>10</sup> +7 dygn i 37° C
- <sup>11</sup> Mixtur med Doxorubicin 1,4 mg/ml
- <sup>12</sup> + 24 h i 37° C
- <sup>13</sup> +24 h i 25° C
- <sup>14</sup> +24 h i 4° C + 24 h i 25° C
- <sup>15</sup> 32° C i mörker
- <sup>16</sup> Hög viskositet ger långsammare infusion. 80 ml i SE 100500 (100 ml, 50 ml/h) går in på 5 h.
- <sup>17</sup> +24 h i rumstemperatur
- <sup>18</sup> Stabilitetsdata refererar endast till kemisk stabilitet, ej mikrobiologisk stabilitet.
- <sup>19</sup> + 24 h i rumstemperatur + 2 h i 37° C

## Referenslista:

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