|  |  |
| --- | --- |
| Concepts | Articles |
| Concept 1 | 385,745 |
| Concept 2 | 1,516,491 |
| Concept 3 | 4,830,642 |
| Concept 4 | 405,034 |
| Overall | 55 |

**Appendix 1.** Search terms used on **Embase** (1973-2022, 26/11/2022).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Concept 1**:  sepsis | AND | **Concept 2**:  Neonates | AND | **Concept 3**:  Antibiotics | AND | **Concept 4**:  Machine learning |
| “sepsis”/exp | 'newborn'/exp | 'antibiotic agent'/exp | 'machine learning'/exp |
| **OR** | **OR** | OR | **OR** |
| “abdominal sepsis” | 'child, newborn' | 'antibiotic' | 'learning machine' |
| **OR** | **OR** | OR | **OR** |
| “focal sepsis” | 'full term infant' | 'antibiotic agent' | 'learning machines' |
| **OR** | **OR** | OR | **OR** |
| “intraabdominal sepsis” | 'human neonate' | 'antibiotic combination' | 'machine learning' |
| **OR** | **OR** | OR | **OR** |
| “sepsis” | 'human newborn' | 'antibiotic drug' | 'deep learning'/exp |
| **OR** | **OR** | OR | **OR** |
| “sepsis syndrome” | 'infant, newborn' | 'antibiotic residue' | 'deep learning' |
| **OR** | **OR** | OR | **OR** |
| “septic disease” | 'neonate' | 'antibiotic spectrum' | 'hierarchical learning' |
| **OR** | **OR** | OR | **OR** |
| “bloodstream infection”/exp | 'neonatus' | 'antibiotics' | 'artificial intelligence'/exp |
| **OR** | **OR** | OR | **OR** |
| “blood infection” | 'newborn' | 'antibiotics and their derivatives' | 'artificial intelligence' |
| **OR** | **OR** | OR | **OR** |
| “blood infections” | 'newborn baby' | 'antibiotics, combined' | 'machine intelligence' |
| **OR** | **OR** | OR |  |
| “blood stream infection” | 'newborn child' | 'antibiotics, folate antagonists' |  |
| **OR** | **OR** | OR |  |
| “blood stream infections” | 'newborn infant' | 'antibiotics, miscellaneous' |  |
| **OR** | **OR** | OR |  |
| “blood-borne infections” | 'newly born baby' | 'antibiotics, nitrofuran' |  |
| **OR** | **OR** | OR |  |
| “bloodstream infection” | 'newly born child' | 'antibiotics, oxalodinones' |  |
| **OR** | **OR** | OR |  |
| “bloodstream infections” | 'newly born infant' | 'combined antibiotic' |  |
|  | **OR** | OR |  |
|  | 'infant'/exp | 'antiinfective agent'/exp |  |
|  | **OR** | OR |  |
|  | 'infant' | 'anti bacterial agent' |  |
|  | **OR** | OR |  |
|  | 'baby'/exp | 'anti bacterial agents' |  |
|  | **OR** | OR |  |
|  | 'baby' | 'anti infective agents' |  |
|  | **OR** | OR |  |
|  | newborns | 'anti-bacterial agents' |  |
|  | **OR** | OR |  |
|  | 'infants'/exp | 'anti-infective agents' |  |
|  |  | OR |  |
|  |  | 'antibacterial' |  |
|  |  | OR |  |
|  |  | 'antibacterial agent' |  |
|  |  | OR |  |
|  |  | 'antibacterial drug' |  |
|  |  | OR |  |
|  |  | 'antibacterial spectrum' |  |
|  |  | OR |  |
|  |  | 'antiinfective agent' |  |
|  |  | OR |  |
|  |  | 'antimicrobial' |  |
|  |  | OR |  |
|  |  | 'antimicrobial agent' |  |
|  |  | OR |  |
|  |  | 'antimicrobial compound' |  |
|  |  | OR |  |
|  |  | 'antimicrobial drug' |  |
|  |  | OR |  |
|  |  | 'antimicrobial factor' |  |
|  |  | OR |  |
|  |  | 'antiseptic' |  |
|  |  | OR |  |
|  |  | 'antiseptic agent' |  |
|  |  | OR |  |
|  |  | 'chemotherapeutic agent' |  |
|  |  | OR |  |
|  |  | 'chemotherapeutic drug' |  |
|  |  | OR |  |
|  |  | 'chemotherapeutica' |  |
|  |  | OR |  |
|  |  | 'microbiological agent' |  |
|  |  | OR |  |
|  |  | 'antiseptics'/exp |  |
|  |  | OR |  |
|  |  | 'antisepsis'/exp |  |
|  |  | OR |  |
|  |  | 'antisepsis' |  |
|  |  | OR |  |
|  |  | antibacterials |  |

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| Concepts | Articles |
| Concepts 1 | 5,562,261 |
| Concepts 2 | 1,614,110 |
| Concepts 3 | 2,201,826 |
| Concepts 4 | 234,037 |
| Overall | 37 |

**Appendix 2.** Search terms used on **PubMed** (1992-2022, 26/11/2022).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Concept 1**:  sepsis | AND | **Concept 2**:  Neonates | AND | **Concept 3**:  Antibiotics | AND | **Concept 4**:  Machine learning |
| sepsis | newborn | “anti-Bacterial Agents“[mh] | “machine learning“[mh] |
| **OR** | **OR** | **OR** | **OR** |
| septic | infant | antibiotic | “artificial Intelligence”[mh] |
| **OR** | **OR** | **OR** | **OR** |
| bloodstream | neonate | antibiotics | “machine learning” |
| **OR** | **OR** | **OR** | **OR** |
| blood | neonatus | antibacterial | “deep learning” |
| **OR** | **OR** | **OR** | **OR** |
| blood-borne | “newly born” | antibacterials | “artificial Intelligence” |
| **OR** | **OR** | **OR** | **OR** |
| sepsis[mh] | baby | antiseptic | “learning machine” |
|  | **OR** | **OR** | **OR** |
|  | “Infant, Newborn”[mh] | antisepsis | “learning machines” |
|  | **OR** | **OR** | **OR** |
|  | Infant[mh] | antiseptics | “hierarchical learning” |
|  |  | **OR** | **OR** |
|  |  | antiinfective | “machine Intelligence” |
|  |  | **OR** |  |
|  |  | antiinfectives |  |
|  |  | **OR** |  |
|  |  | antimicrobial |  |
|  |  | **OR** |  |
|  |  | antimicrobials |  |
|  |  | **OR** |  |
|  |  | chemotherapeutic |  |
|  |  | **OR** |  |
|  |  | chemotherapeutics |  |

|  |  |
| --- | --- |
| Concepts | Articles |
| Concepts 1 | 5,564,429 |
| Appendix | 1,805,129 |
| Concepts 3 | 1,440,589 |
| Concepts 4 | 976,262 |
| Overall | 37 |

**Appendix 3.** Search terms used on **Scopus** (1966-2022, 14/11/2022).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **concept 1**:  sepsis | and | **concept 2**:  neonates | and | **concept 3**:  Antibiotics | and | **concept 4**:  Machine learning |
| TITLE-ABS-KEY(sepsis) | TITLE-ABS-KEY(newborn) | TITLE-ABS-KEY(antibiotic) | TITLE-ABS-KEY(“machine learning”) |
| **OR** | **OR** | **OR** | **OR** |
| TITLE-ABS-KEY (septic) | TITLE-ABS-KEY(infant) | TITLE-ABS-KEY(antibiotics) | TITLE-ABS-KEY(“deep learning”) |
| **OR** | **OR** | **OR** | **OR** |
| TITLE-ABS-KEY (bloodstream) | TITLE-ABS-KEY(neonate) | TITLE-ABS-KEY(antibacterial) | TITLE-ABS-KEY(“artificial Intelligence”) |
| **OR** | **OR** | **OR** | **OR** |
| TITLE-ABS-KEY (blood) | TITLE-ABS-KEY(neonates) | TITLE-ABS-KEY(antibacterials) | TITLE-ABS-KEY(“learning machine”) |
| **OR** | **OR** | **OR** | **OR** |
| TITLE-ABS-KEY (blood-borne) | TITLE-ABS-KEY(“newly born”) | TITLE-ABS-KEY(antiseptic) | TITLE-ABS-KEY(“learning machines”) |
|  | **OR** | **OR** | **OR** |
|  | TITLE-ABS-KEY(baby) | TITLE-ABS-KEY(antisepsis) | TITLE-ABS-KEY(“hierarchical learning”) |
|  |  | **OR** | **OR** |
|  |  | TITLE-ABS-KEY(antiseptics) | TITLE-ABS-KEY(“machine Intelligence”) |
|  |  | **OR** |  |
|  |  | TITLE-ABS-KEY(antiinfective) |  |
|  |  | **OR** |  |
|  |  | TITLE-ABS-KEY(antiinfectives) |  |
|  |  | **OR** |  |
|  |  | TITLE-ABS-KEY(antimicrobial) |  |
|  |  | **OR** |  |
|  |  | TITLE-ABS-KEY(antimicrobials) |  |
|  |  | **OR** |  |
|  |  | TITLE-ABS-KEY(chemotherapeutic) |  |
|  |  | **OR** |  |
|  |  | TITLE-ABS-KEY(chemotherapeutica) |  |